

The Canadian Medical Association Journal

VOL. II.

JULY, 1912

No. 7

DOES CHOLECYSTENTEROSTOMY DIVERT THE FLOW OF BILE FROM THE COMMON DUCT?

BY EDWARD ARCHIBALD

*Assistant Surgeon to the Royal Victoria Hospital
Associate Surgeon to the Children's Memorial Hospital, Montreal
Lecturer in Clinical Surgery, McGill University*

OUR knowledge of the pathogenesis of pancreatitis is still, in many of its aspects, that of surmise only. In one particular alone do we seem to stand on sure ground. The action of bile, if it gain access to the pancreatic duct, in precipitating the attack of pancreatitis has been so clearly demonstrated by the observations of Opie and of Flexner, and is now so generally known, that one need do no more than refer to the fact. Opie's original observation was so striking a one, and the subsequent experimental work so convincing in this respect, that, in the minds of most clinicians to-day, a pancreatitis is without further question assumed to be dependent upon biliary infection, usually the result of gall-stones. This is an error. Nearly half of the cases of pancreatitis observed during the last ten years in the Royal Victoria Hospital have been unassociated with gall-stones, and many of them have shown no gross evidence of infection. This, however, is by the way. What is of importance for our present purpose is that this conception of the infectivity of bile and of obstruction at the papilla of Vater to the exit of bile into the duodenum, has been the chief factor in determining the present day treatment of pancreatitis, namely, the treatment by bile drainage or bile diversion, so called. It is unnecessary in this place to relate the history of the development of this plan of treatment. Enough that a drainage of the bile over a considerable period of time is advised, almost unanimously, by the leaders of surgery in this country and abroad.

It has been, however, a matter of dispute, whether one should

drain the bile by a cholecystostomy or a cholecystenterostomy. The former has been called a temporary, and the latter a permanent, drainage; and on the assumption of the correctness of the ideas indicated in these terms, the argument has usually concerned itself, to put it briefly, with the sufficiency of the one or the necessity of the other. A short quotation from an article on pancreatitis by one of the accepted authorities will, perhaps, illustrate the matter better than could any words of the writer. Wm. J. Mayo ("The Surgical Treatment of Pancreatitis," *Surgery, Gynecology, and Obstetrics*, December, 1908), writes as follows: "The surgical treatment of chronic pancreatitis is not usually directed to the pancreas itself . . . but rather to the biliary tract, and is best accomplished by diverting the bile to the surface by means of cholecystostomy, or to a new point in the gastro-intestinal canal by cholecystenterostomy.

"In those cases of chronic pancreatitis in which no stones are present, cholecystostomy cannot be relied upon, because the continuation of the pancreatic disease lies outside of and beyond the biliary tract; and in these cases more prolonged, if not permanent, diversion of the bile from its pancreatic association is necessary, and cholecystenterostomy is indicated."

The reasoning which leads to conclusions of the nature indicated by the quotation just made is based upon the fact, or the assumed fact, that a swelling of the head of the pancreas constitutes such an obstruction to the flow of bile in the common duct, as to render it apt to force the bile into the opening of Wirsung's duct and so set up an inflammation in that gland. And the researches of Opie and others, who found that, in approximately two-thirds of the subjects examined, the common duct ran through the substance of the pancreatic head, while only in one-third did it run outside the gland, have been freely cited in support of this reasoning. If the common duct is ordinarily surrounded by pancreatic tissue, any material degree of swelling of that tissue—so runs the argument—would obviously compress the duct and dam back the bile.

Now, however well proven such a train of events may be in a certain proportion of cases, the conclusion has been forced upon the writer that that proportion is a quite inconsiderable one. Two clinical facts must have impressed themselves upon most surgeons of any experience. One is that jaundice, in cases of pancreatitis, save in the severe lesions of acute and great swelling, is conspicuous by its absence; and that, when present, it is remarkable for its slightness and its transitoriness. In other words, pancreatitis usually

leaves the common duct patent, whether the duct run through the pancreas or not. The other fact is that the ordinary cholecystostomy drains to the surface no very great proportion of the total quantity of bile secreted, except in cases where the common duct is seriously and permanently obstructed; and, moreover, it is not easy by such an operation to maintain for long the drainage of even that small proportion of bile that does find an exit by this way. Nature loves to tread the old paths, and is not easily drawn aside.

Considerations of this nature led the writer several years ago to suspect the validity of the reasoning previously indicated, that reasoning, indeed, which suggested the recommendation of cholecystenterostomy as a method of diverting the bile from the common bile duct and the neighbourhood of the pancreatic duct for the cure of chronic pancreatitis. A gastroenterostomy in the presence of a patent pylorus will not divert the stream of food from the pylorus, if the work of Kelling and of Cannon and Blake is to be definitely accepted. In the same way it seemed possible, even likely, from analogous considerations, that a cholecystenterostomy, in the presence of a patent common duct, would not divert the bile from its natural course.

It was thought that a few experiments would settle the question easily. Accordingly these were undertaken over two years ago, and the early results were briefly mentioned in an address given about that time.*

The experiments have since been carried on at long intervals until recently, and in all eight dogs have been operated on. The general plan of the experiments has been as follows: A cholecystenterostomy was done, using a chance loop of the small bowel; this loop was then isolated from the rest of the bowel by resection; one end was closed and intubed, while the other, left open, was sutured into the abdominal wall. Great care was taken to preserve sufficient mesentery to nourish this loop. The cut ends of the general bowel were then reunited, and the abdominal incision closed, save for the point where the open end of the isolated loop was brought out. In closing, care was taken to leave abundant room for the passage of the bowel, so as to exclude the possibility of obstruction by the muscle of the abdominal wall.

It was assumed that, if the cholecystenterostomy actually did the work usually ascribed to it, there would occur a copious outpouring of bile on the surface.

*"Pancreatitis, the Acute, Subacute, and Chronic Recurring Forms of the Disease." *Maritime Medical News*, March, 1910.

Eight dogs have been used for the purpose of this investigation. In all, profound ether anæsthesia was given. The anastomosis was made by suture in all but one, when a small Murphy button was employed. The size of the anastomotic opening was rarely less than one inch, an opening which in dogs, usually of terrier size in this series, is relatively larger than that made in the human in this operation. The opening was proved to be patent in all the dogs at autopsy.

The operation being a more or less difficult one by reason of the smallness of the parts and the remoteness of the gall-bladder, hidden under the lobes of the liver, it happened that the first three animals died of shock or of infection within the first four days. The next lived about a week, and the succeeding ones survived for long periods of time.

While one or two protocols are appended in detail, it may be said at this point, for the sake of brevity, that in none of the animals was there discharged from the cholecystenterostomy opening more than a few drops of bile in the twenty-four hours. It was found impossible to collect and measure accurately the quantity escaping. Yet by keeping the animal in a cage or a room apart, or by keeping an absorbent cotton dressing on the wound, it was not difficult to estimate that approximately only 2 or 3 c.c., at most, were escaping. On one occasion, a cotton wool pad which had been on the wound for twenty-four hours was soaked in a measured quantity of distilled water, and then thoroughly expressed. The amount got in this way was only $3\frac{1}{2}$ c.c. in excess of the original amount; the quantity of bile, therefore, passing by the cholecystenterostomy was about $3\frac{1}{2}$ c.c. in the twenty-four hours, in this instance. Even this amount was exceptional. Ordinarily, no bile at all escaped.

The failure of the new opening to divert the stream of bile was conspicuously evident in the case in which a Murphy button was employed for the anastomosis. This dog lived only four or five days. On the third day the suture line gave way, the button dropped out, and the gall bladder was visible in the depths of the wound with a large hole in it. Even with this perfectly free passage, the amount of bile that came through was minimal.

PROTOCOLS

No. 1. Good-sized, whitish-brown bull-dog. Operation, January 28th, 1911—Cholecystenterostomy with isolation of loop of ileum as above described. Anæsthetic, morphine and ether. Anastomosis three-quarters of an inch long, and made in fundus of gall-bladder. One end of isolated loop of small bowel crushed and inturned; the other end sutured in abdominal wound. The aperture in peritoneum, muscles, and skin was left very loose to avoid constriction.

January 30th. First dressing. Wound clean. Mucous discharge from projecting stump of bowel, but no bile. Stools well coloured. No bile in vomitus.

February 2nd. Dressed—no traces of bile on dressings (plaster cast).

February 20th. Since last note, bile has been found to the amount of a few drops on floor of room in which animal is kept, or in cotton wool placed in the bottom of cage, but on some days, none is found.

February 27th. Attempts to keep cup fastened over wound regularly fail. Cotton wool is kept on under plaster for twenty-four hours, and this wool, by expression in a meat-presser (as above mentioned), yields $3\frac{1}{4}$ c.c. bile.

The frequent passage of a blunt forceps down the loop of bowel as far as the anastomosis proves the absence of any retention of bile, more than three or four drops, in the loop. There is no constriction of bowel in its passage through the abdominal wall. For days at a time, no bile whatever can be found escaping. Observations shows that the dog is not taking up escaping bile by licking the wound. The position of the wound in any case renders this well-nigh impossible.

This dog was kept under observation till September 27th, 1911, during which time bile was never observed to escape save occasionally, and in minute quantities. It was then killed. Autopsy showed the anastomosis to be three-quarters of an inch in length, and to be patent. There were merely traces of bile in the gall-bladder and in the isolated loop of bowel. The organs were otherwise healthy.

No. 2. Large brown mastiff. Operation February 11th, 1911. Same as above. Anastomotic opening one and a half inches long.

February 13th. First dressing. No bile on dressings.

February 16th. Second dressing. Dressings soaked with serous and mucous discharge very slightly bile-stained. Forceps passed down loop for three inches and dilated; no flow of bile. Wound healthy. Dog in good condition. Stools coloured a deep yellow.

Death on the morning of the 18th, from general peritonitis, which developed first on the 17th, as the result of an accident. Post mortem showed that the bowel had been torn away from its attachment to the gall-bladder over about three-quarters of the circumference of the anastomosis. The gall-bladder was collapsed. In the pus which filled the abdominal cavity there was no definite evidence of bile.

The natural conclusion would seem to be that, unless the obstruction to the common duct is considerable, and bids fair to be permanent, in cases of chronic or subacute pancreatitis it is useless to do a cholecystenterostomy in the expectation of securing permanent bile diversion.

But obstruction of the common duct, as evidenced by marked jaundice, or jaundice persisting longer than a few days, is an altogether exceptional event in pancreatitis. Cholecystostomy is therefore, in the writer's opinion, the operation of choice, and is to be considered the normal procedure. Although it cannot be counted on to divert, any large proportion of the total bile excreted, it does divert at any rate such an amount as may very possibly relieve some of that pressure in the common duct under which bile is forced out into the duodenum. In a series of observations on patients with a cholecystostomy for the condition of pancreatic swelling, it has been rare to find the twenty-four hour amount of bile in the receptacle attached to the drainage tube exceed six ounces. And the normal amount excreted varies from 16 to 27

ounces. In the writer's cases of chronic pancreatitis such bile drainage by cholecystostomy has been kept up for eight to twelve weeks, with, hitherto, satisfactory results.

Interesting as these results are, they have by no means cleared up the question of why bile drainage, even partial as it certainly is, appears to have a beneficial effect on the condition of pancreatic swelling. It may be, as above suggested, that this beneficial effect is due, not to a diversion of the bile in itself away from the open door of the pancreatic duct, but to a reduction of the pressure in the common duct by virtue of a diversion of part of the bile through the gall-bladder. In a series of recent experiments, which will form the subject of a later paper, it has been found that the hydrostatic pressure in the common duct, that is the pressure which the Oddi-Helly sphincter at the papilla of Vater will oppose to a column of water, is surprisingly high. The sphincter is rarely completely overcome by any pressure less than 600 mm. And before the sphincter yields, the gall-bladder always becomes extremely tense. It is, therefore, easily conceivable that under certain circumstances, particularly prolonged absence from food (acid chyme arriving in the duodenum is probably the physiological stimulus to relaxation of the bile sphincter), the bile may come under considerable tension in the hepatic and common ducts and in the gall-bladder before the sphincter is mechanically forced. During this state of tension, it is again conceivable that small quantities of bile might be forced back into the pancreatic duct, and there either cause or help to maintain a condition of pancreatitis. Under such circumstances, a cholecystostomy would act as a safety-valve, preventing the occurrence of any marked tension in the common duct during the intervals between the times of physiological relaxation of the papillary sphincter, and in this way its probable beneficial action in chronic pancreatitis might be explained.

It may be remarked, in passing, that the condition of fasting above referred to as being likely to leave the sphincter closed, is especially frequent in chronic alcoholics, in which class of patient the incidence of pancreatitis is so frequent.

CONCLUSIONS

1. Cholecystenterostomy in the dog, in the presence of a patent common duct, does not divert the flow of bile from the common duct to any appreciable extent.
2. Cholecystostomy, which does succeed in diverting a portion of the bile from the common duct, is therefore the operation of choice for cases of chronic and subacute pancreatitis.

LABORATORY TESTS IN THE DIAGNOSIS OF
GENERAL PARESIS

BY C. S. McVICAR, M.B.

Pathologist, Toronto Hospital for Insane,

GORDON BATES, M.B.

Surgical Registrar, St. Michael's Hospital, Toronto,

AND GEORGE S. STRATHY, M.D.C.M., M.R.C.S., L.R.C.P.,

Assistant Pathologist, Hospital for Sick Children, Toronto.

SINCE the discovery in 1900, by Ravault, Widal and Sicard¹, that the cell count of the spinal fluid is increased in parasymphilis, a large amount of laboratory investigation has been carried on along similar lines. In 1901 Achard, Loefer and Lanbry² discovered that the spinal fluids of parasymphilitics had a higher protein content than the normal, and that the nature of this protein was a globulin. In 1906 Wassermann and Plaut³ enlarged the field of investigation by showing that the spinal fluid in these cases was also capable of deviating complement; or, to use a more common phraseology, gave a positive Wassermann reaction. In the latter work⁴ they show that the blood of paretics is even more constant in deviating or fixing the complement. The findings of others, especially the French observers, do not agree with Plaut's in this respect, but show a higher percentage of positive reactions in the spinal fluid than in the blood serum. Noguchi, in 1909, described a simple method of demonstrating the increase of globulin by the addition of butyric acid and sodium hydrate⁵, and since that time this test has borne his name. Nissl, Hendel, Nonne, and Apelt⁶ used the saturated ammonium sulphate solution to prove the presence of globulin, and Ross and Jones,⁷ by a modified technique, made the test more delicate, although the same solution was used.

During the past eighteen months, a series of cases have been investigated in the Toronto Hospital for the Insane, in the following manner: On admission the subjective history was secured, and the physical and mental examination made by the physician in charge of the case. The patient and history were then presented

at a conference of the medical staff, and a provisional diagnosis recorded. In this manner, two classes of cases were differentiated: (1) patients presenting well-defined clinical evidences of general paresis; (2) patients who were clinically less clear cut, but where paresis was a possibility; e.g., certain cases of chronic alcoholism.

In all, forty-six cases were investigated in an endeavour to determine which are the most reliable, and what can be deduced from an examination by these tests. The work has been carried out in two parts. One of us (McVicar) undertook the cell count, the Noguchi (butyric acid) test, and the ammonium sulphate reaction. The estimation of the number of cells was made in about half the cases by Ernest Jones's method, and in the remainder by the more tedious method of examining ten preparations with an ordinary white blood pipette, with the counting chamber 1 mm. square and 1-10 mm. deep; a negligible amount of methyl violet was added to colour the cells. The other two (Bates and Strathy) examined the sera and fluids for the amboceptor reaction. The technique here used was similar to the original Wassermann method, except that alcoholic extracts of dog's liver and human heart were used as antigen instead of a watery extract of syphilitic liver. The sera and fluids were tested without knowledge of the history of the patient, and numerous controls of non-paretic sera and fluids were intermingled in the tests.

An analysis of the thirty-eight clinically undoubted cases of paresis shows a positive Wassermann reaction in all the spinal fluids except that of "F.T." and "T." The former of these two was negative for all the tests, except that once his serum gave a doubtful reaction; his case will be referred to in detail later. The latter gave a doubtful reaction, which was positive when repeated some months later.

The twenty-five cases in which the blood serum was examined were all positive except the afore-mentioned "F.T." If his case be excluded, the results then give 100 per cent. positive results in the spinal fluid and serum of all the paretics tested. His case is doubtful. The cell count in all these cases was increased, although "D." gave a count of only six per c.mm., which is not necessarily pathological. The Noguchi and ammonium sulphate tests for globulin gave similar results in all cases, so that one does not appear to be less accurate or more delicate than the other. The globulin tests were positive in thirty-six out of the thirty-eight cases. "F.T." gave one of the negative results, and "T's." fluid was negative the second time, although positive the first time.

PATIENT.	CASE BOOK No.	DIAGNOSIS.	GLOBULIN ESTIMATION.		CELL COUNT.	WASSERMANN REACTION.		ADDITIONAL HISTORY.
			NOGUCHI.	AM. SULPH.		C. S. F.	BLOOD.	
			CLASS	(1) UNDOUBT	ED PA	RETICS.		
B.	104	G.P.I.	+	+	240	+	+	Aortitis
D.	374	G.P.I.	+	+	40	+	+	
W.	447	G.P.I.	+	+	10	+	+	Aneurysm of Aorta.
P.G.	450	G.P.I.	+	+	83	+	+	
P.	460	G.P.I.	+	+	90	+	+	
M.	512	G.P.I.	+	+	210	+	+	
B.	530	G.P.I.	+	+	98	+	+	
Y.	591	G.P.I.	+	+	75	+	+	
C.	743	G.P.I.	+	+	60	+	+	Endocarditis Mitral.
M.	770	G.P.I.	+	+	18	+	+	
C.	838	G.P.I.	+	+	320	+	+	
B.	865	G.P.I.	+	+	96	+	+	
T.	877	G.P.I.	+	+	379	+	+	
N.	879	G.P.I.	+	+	79	+	+	
S.F.	902	G.P.I.	+	+	158	+	+	Juvenile Age 18.
J.	911	G.P.I.	+	+	25	+	+	
D.	919	G.P.I.	+	+	6	+	+	
R.	935	G.P.I.	+	+	35	+	+	
D.	1000	G.P.I.	+	+	42	+	+	
S.	1002	G.P.I.	+	+	540	+	+	
D.	T.G.H.	G.P.I.	+	+	160	+	+	
F.R.	T.G.H.	G.P.I.	+	+	40	+	+	Juvenile, Aged 13.
F.T.	866	G.P.I.	-	-	0	-	-	
	Repeated 1 week later							
T.	891	G.P.I.			154	+		
	Repeated 8 months later							
L.	68	G.P.I.	+	+	48	+	Not done	
D.	99	G.P.I.	+	+	180	+	Not done	Endocarditis Mitral
C.	101	G.P.I.	+	+	130	+	Not done	
J.	118	G.P.I.	+	+	189	+	Not done	
L.	340	G.P.I.	+	+	448	+	Not done	
D.	572	G.P.I.	+	+	98	+	Not done	
P.	670	G.P.I.	+	+	224	+	Not done	
D.	719	G.P.I.	+	+	98	+	Not done	Endocarditis Mitral.
M.	784	G.P.I.	+	+	200	+	Not done	
F.	825	G.P.I.	+	+	198	+	Not done	
B.	852	G.P.I.	+	+	9	+	Not done	
O'C	920	G.P.I.	+	+	80	+	Not done	
B.	892	G.P.I.	+	+	229	+	Not done	
B.	822	G.P.I.	+	+	90	+	Not done	

PATIENT.	CASE BOOK No.	DIAGNOSIS.	GLOBULIN ESTIMATION.		CELL COUNT.	WASSERMANN REACTION.		ADDITIONAL HISTORY.
			NOGUCHI.	AM. SULPH.		C. S. F.	BLOOD.	
			CLASS (2)		SUSPECTED	PARETICS.		
M.	503	Suspected G.P.I.	-	-	43	-	-	Alcoholic.
	Repeated 4 weeks later			20	+	-	
J.M.B.	785	Suspected G.P.I.	-	-	2	+	Not done	Syphilis 17 years ago.
S.	788	Suspected G.P.I.	-	-	0	+	Not done	Alcohol and Morphine.
G.	840	Suspected G.P.I.	-	-	0	-	Not done	Discharged improved.
L.	908	Suspected G.P.I.			21	+	Not done	A prostitute.
	Repeated 10 months later				0	-	-	
McG.	970	Suspected G.P.I.	-	-	0	-	Not done	Alcoholic.
C.	994	Suspected G.P.I.	-	-	15	-	-	Korsakow's Hist. Syphilis 17 years ago.

"F.T." is an Italian labourer, aged fifty-two years. He has worked hard and drunk beer for years. Two years ago he had a right hemiplegia with some degree of aphasia. He now has loss of pupil reflexes; loss of knee jerks; there is a general muscular weakness, most marked in the right arm. There is a very well-marked, generalized, muscular tremor, accentuated by effort. He has some loss of memory and some difficulty in speech. He says he understands all questions asked him, but cannot express himself well since his aphasia occurred. He shows some exaltation. At conference, opinion of the diagnosis was divided, the possibilities being paresis, imbecility, arterio-sclerosis, Korsakow's psychosis, or some association of these. It will be noticed that the laboratory findings in his case, except for one doubtful reaction in his blood serum, are negative. Further observation and investigation of his case promises to be of great interest.

In the next series, those suspected of paresis on admission, results of the tests vary. Of eight cases, six later turned out not to be paretics. In the other two (J.M.B. and L.) the diagnosis is still in doubt. Both gave doubtful globulin tests, and positive

Wassermann reactions on the cerebro-spinal fluid. "J.M.B." had syphilis seventeen years ago, and has had mental symptoms for seven years, with some exhaltation, lately very marked. His father and sister were insane. His spinal fluid gave a cell count of two. The serum was not tested. He may be an early paretic. "L." was a prostitute, but gave no history of infection. Her clinical symptoms are unequal pupils, exaggerated knee jerks, and loss of memory. Her fluid gave a doubtful globulin test, cell count of twenty-one, and a positive Wassermann reaction. On repeating all these tests eight months later they were negative, and also the blood serum. Of the six cases which proved not to be paresis, the fluid of one first gave a doubtful reaction, and, on repeating four weeks later, was negative. The fluid of another gave a positive reaction, and in the rest negative reactions were obtained. The cell count in two was increased, and one of these gave a doubtful result to the globulin test.

In one hundred and fifty sera and twenty spinal fluids of patients with no history or symptoms of syphilis, the Wassermann reaction was not present. The fluids were taken from cases of non-infective psychoses, tuberculous and meningococcic meningitis, brain tumours, paralysis agitans, disseminated sclerosis, and healthy persons.

Too much importance should not be placed on the results of a series so limited in number, but it would seem that from these cases the following can be deduced: (1) An increased cell count is present in nearly all cases of paresis but may also be found in Korsakow's psychosis, and meningeal conditions of various origins. (2) General paresis without a positive Wassermann reaction in both spinal fluid and blood serum is rare. (3) Globulin can be detected in the spinal fluid of nearly all paretics. The Noguchi and ammonium sulphate tests are of equal delicacy. (4) A positive Wassermann reaction may be obtained in the spinal fluid of patients who have had syphilis and who cannot yet be diagnosed clinically as cases of general paresis.

References:

1. *GAZ. DE HOP*, Paris, 1900.
2. *Arch. de med. exper.*, July, 1901.
3. *Deutsche med. Woch.*, July, 1906.
4. MONOGRAPH. "The Wassermann Sero-diagnosis of Syphilis in its application to psychiatry."
5. *Journal of experimental medicine*, January 12th, 1909.
6. *Arch. fur psychiat u nervenkrankh*, 1907, Bd. 43.
7. *British Medical Journal*, May 8th, 1909.
8. *Review of Neurology and Psychiatry*, July, 1907.
9. *Canadian Journal of Medicine and Surgery*, November, 1911.

THE BONE-MARROW, A STUDY FROM THE STANDPOINT OF THE CLINICAL PATHOLOGIST

BY O. C. GRUNER, M.D., MONTREAL

THE number of years which have elapsed since the discovery that definite changes take place in the bone-marrow during the course of acute infections is comparatively small. The literature abounds with brief references to the structure of this tissue in the various diseases of the blood, but it is exceptional for detailed cell-counts to be presented even in these cases. It is the object of the present essay to indicate in how many directions the investigation of the finer changes in the bone-marrow may serve a useful purpose to the clinician.

The conclusions presented are based on the observation of marrow tissue obtained from about two hundred autopsies performed at the Royal Victoria Hospital, Montreal; and from rats and rabbits, the subject of experimental inoculations. The spleen and lymph nodes were investigated in the same series of cases in order to contrast the appearances in the different hæmatopoietic organs.

I. THE KALEIDOSCPIC CHARACTERS OF THE BONE-MARROW TISSUE. The most remarkable feature of the histology of the bone-marrow is its inconstancy. It is one of the chief achievements of modern histo-pathology to have demonstrated the mutability of marrow-tissue during the development or growth of the individual, during infections, and, to a less defined extent, during the course of chronic non-infective diseases. The contrast between the effects of such disordered states as these and the changes characteristic of the leukæmias cannot fail to impress the student with a definite sense of mystery in regard to the fundamentals upon which such variations depend.

The first point, therefore, which one wishes to emphasize, is that the relative proportions between the different cell-constituents of the marrow, as well as the actual variations of cell-type met with, are ever changing; that there is remarkable rapidity (F. F. Leighton⁶) of adaption to incoming morbid or physiological

Read before the Montreal Medico-Chirurgical Society, April 26th, 1912.

stimuli; that the changes in which one or other of a group of cells are concerned, may themselves be multiple in type, regenerative, degenerative, reparative, aberrant; that we have the same impression of restlessness and excitement among the parental inhabitants of this tissue as is seen in a crowd of spectators who press forward beyond the barrier for the purpose of obtaining a better view of the object of their visit but are forced back by the rigid rules adopted by the vigilators of the course for the maintenance of order.

An attempt to bring mental order out of such a chaos of facts would seem more than hazardous; it would suffer from the lack of common-place terms suitable for its adequate literary expression. On the other hand, a due recognition of the endless variations in morphology of the cells of the bone-marrow, the long succession of intermediate stages which is passed through before the ancestor has given place to the finished member of the hæmatic community, cannot fail to be of value to the student of disease as well as to the clinician who desires complete understanding of the nature of the phenomena with which he is constantly presented in the course of his practice.

II. PRACTICAL UTILITY OF A STUDY OF THE SUBJECT. The question has arisen as to whether an investigation of the bone-marrow in a given patient could possibly aid diagnosis or prognosis. During very recent years it has been remarked that cases arise in which a mere blood examination proves inconclusive. The differentiation of the anæmias, the diagnosis of certain forms of lympho-sarcoma, the significance of splenic enlargements, the significance of certain glandular enlargements whose nature is doubtful as far as ordinary clinical methods go,—all these problems might come to solution if the bone-marrow were studied during the life of the patient.

While admitting that this method of clinical pathological study might be called for only at rare intervals, there can be no doubt that it is more than justifiable for the hospital pathologist to determine whether or no such an addition to the armamentarium of the clinician be feasible. Cases arise in every community where a valued life demands the help of every branch of medical research.

Even should our efforts in the above direction prove futile, we should still find that the study of experimentally diseased marrow and of fresh autopsy material would furnish us with striking facts which go to explain how death may arise under certain conditions without obvious disease of the internal organs. They also serve

the purpose of explaining why some subjects succumb to, and others recover from, certain infections and intoxications. In other words, a routine study of bone-marrow at autopsy frequently throws valuable light upon the pathology of the case.

III. HISTORY OF THE SUBJECT. Inasmuch as the important facts on this subject are now very numerous, while the number of workers is comparatively small, there is little call for a complete account of the historical aspect of the question. Every one knows of Ehrlich's fundamental pioneer work in this direction. In England, the work of Muir¹¹ in 1902, and of Carnegie Dickson² in 1908, has provided the subject-matter of everything relating to bone-marrow that has so far appeared in any English text-book. In the German literature, the investigators of this tissue are also the celebrated hæmatologists of the present day—Dominici, v. Domarus, Pappenheim, Benda, Naegeli, Schridde, Hirschfeld, the late E. Grawitz, and others.

One point, however, calls for particular notice. The methods of cytological investigation utilized by English writers have been limited to the hæmatoxylin, the Ehrlich triacid, and eosin and methylene-blue processes. These may be regarded, for practical purposes, as obsolete. The use of azur dyes is essential to an adequate study of bone-marrow cells, because the question of the significance of cellular lipoids in these cells seems to be all-important before a true conception can be gained of the relations between immunity processes and marrow reactions.

IV. CORRELATION OF BLOOD-CELL COUNTS WITH MARROW-CELL COUNTS. The clinician does not stand by any one given sign in making a diagnosis but rather takes a general survey of every system. The same rule should hold good in studying the pathology of the bone-marrow. It is essential to know exactly what cells are to be found in the circulating blood, and to have some idea of the state of the other hæmatopoietic organs. It is just here that the need of a reunion between clinician and pathologist is well shown. The former would tend to desire an interpretation of cytological findings from the latter, but the pathologist can only be one-sided if he does not himself correctly appreciate the conditions in the *living* patient. As this matter is very important, I would like to lay stress on this second thesis,—the *correct interpretation of the blood count itself*. There are certain details required for comparative studies of this kind which can only be touched upon at present, because they themselves would require lengthy exposition. Suffice it to say that the ordinary "differential count" is presented to the

clinician in such a way that he cannot find an answer to the following questions: As regards the neutrophile leucocytes, how many of these have been just liberated into the circulation, and how many of them are old-stagers? Are any of them succumbing to any particular type of toxin? Are any of them abortions—that is, delivered, from their parents, into the circulation prematurely? As regards the lymphocytes, are these juvenile, or are they decrepit and old? Do any of them come from abnormal sources? How many of them, to invent some new words for expressing new ideas, are adsorptoid and how many nutrioid, etc.? And so on.

In other words, the blood-film does not tell us that the patient is suffering from disease so-and-so, whose description is on page such-and-such of our text-book of medicine or surgery, but it merely represents a transient state of blood and its factories induced either by the morbid agent or by natural physiological periodic stimuli. Therein lies the key to the solution of all our difficulties about blood morphology and marrow-cell morphology. There is no pathognomonic sign for any disease either in the blood or in the marrow, except in the case of detection of parasites or bacteria. Erythroblasts, megaloblasts, Rieder cell-types, plasma cell-types, etc., etc., are not specific findings. All we might say is that they are more common in such and such diseases.

My investigations during a number of years have led me to feel very strongly on this aspect of the study of blood-disease—the finding of finer variations in cytological characters in strictly physiological conditions* suggests how inadequate our routine methods of blood examination are from the scientific point of view; this is unavoidable because of the consumption of time involved in full blood-counting.

These remarks apply with even more force in the case of the bone-marrow. We must not be led away by an idea that an examination of this tissue either *intra vitam*, *sub finem vitæ*, or *post mortem*, is going to prove the existence of this or that disease. It will inform us of a transient state of the hæmatopoietic organ. If changes have been induced in it which are unavoidably long in returning to the normal cycle, then in those circumstances we may learn something of value, provided we know also what output of cells there is into the circulation.

The greatest mystery before us at present is expressed by this question,—why do immature cells usually fail to enter the blood-

*I refer here to diurnal cyclical variations of lymphocyte forms, and the effect of muscular exercise upon them.

stream, and why do such cells, in so-called leukæmias, suddenly, irretrievably, persistently, overflow their barriers? From the foregoing considerations, then, we learn three things: first, that the histology of the marrow is not complete unless we know which of the cells are entering the blood-stream; second, that the finer structure varies from hour to hour or from day to day according to laws at present unknown to us.

V. FALLACIES IN INTERPRETATION OF RESULTS. The fallacies to which the pathologist is exposed are serious, but correct adjudication of the data will do much to avoid them. As we have just stated, we must beware against diagnosing a name from the cell-count, and we must take the *toute ensemble* of the patient's body into consideration.

There is, however, this further problem,—is the marrow the same in composition throughout the skeletal system? A number of observers have asserted that it is not, more from theoretical ideas than from an actual investigation. As far as I have seen this objection is making a mountain out of a mole-hill. In other words, the structure of the marrow of the ribs, sternum, vertebræ, and tibia, in a given case, is frequently constant,—within reasonable limits. In some cases, it is true, there may be considerable variation. It is chiefly in regard to the question of lymphomatous or neoplastic nodules disseminated irregularly through the osseous system that we have obvious exceptions. But it would be as reasonable to state that no observation on the histology of the liver (e.g.) would be complete unless serial sections were prepared and studied with the oil immersion lens from end to end. Such a procedure is obviously impracticable. If it is permissible to deduce pictures of morbid states in the liver from the careful study of several sections, it is equally permissible to deduce pictures of morbid states in the marrow from the careful study of several film preparations. Our results, finally, are quite well controlled by the concomitant blood-count and, sometimes, by the study of other tissues.

VI. TECHNIQUE. My reference to technique must be brief. The idea of extracting samples of bone-marrow from the living originated with Ghedini³ in 1908. An obvious source of material of this kind lies in excised ribs and amputated limbs. These have been utilized in the Montreal Royal Victoria Hospital. Further, through the kindness of Dr. Archibald, definitive puncture of the tibia was made on two of his cases with satisfactory results. The technique of this operation need not be considered here. The material is examined by means of film preparations and by ordinary

sections. The former alone enable cell-counts. The staining methods are reducible to one,—the combined Jenner-Giemsa, or panoptic staining method of Pappenheim.

VII. THE CELL ELEMENTS OF THE BONE-MARROW. The nomenclature which I adopt in the following remarks is largely that introduced by Pappenheim, who has done the inestimable service to science of placing the cytology of the blood cell on an absolutely sound basis. The cells of normal bone-marrow are usually divided into four groups,—the blood-forming cells, the giant cells, the connective tissue cells, and the endothelial cells. The former are divided by Carnegie Dickson into a leucocyte and an hæmoglobin holding series, but a third might be added—the indifferent or indeterminate cells. The latter are those possessing varying or multiple potentialities—being erythropotent under certain stimuli and leucopotent under others.

The red-cell-forming group: These include the normoblasts and the megaloblasts. At some stages of development these come to simulate other lymphoid cells, so that it is important to note carefully the nuclear structure before deciding upon the nature of a given cell. The absolute criterion of normoblastic character is the arrangement of the nuclear matter along the periphery of the nucleus, close to the membrane, with central chromatic spots. The lymphocyte nucleus never shows this structure, but presents a diffuse ill-defined variation in density of chromatin,—trachychromatism. Giemsa preparations fail to show any nucleolus within the normoblast nucleus, whereas it is generally present in the lymphocyte. When the nucleus of the red cell undergoes pycnosis there may be a superficial resemblance to a neutrophile leucocyte whose granules have been lost from degenerative changes.⁴ As a rule, the slight greenish or bluish tint of the normoblast cell-body from the presence of more or less hæmoglobin is noticeable. The megaloblast may occasionally be mistaken for a lymphoid cell, but the structure of the nucleus is also characteristic. The lines of chromatin tend to be radial, and the cell-body has a different tint.

The white-cell-forming series: Here we have the non-granular and the granular cells. The latter are characteristic and well-known. The granules are always clearly shown in the triacid preparation, but the characteristic nuclear structure,—rather coarse but ill-defined transverse shadowing,—is best seen in the Panoptic preparations. The granular cells of the marrow are, of course, myelocytes of one kind or another; that is, they have an oval, or

reniform, or deeply indented nucleus, as opposed to the polymorphous nucleus of the adult leucocyte. The nuclear structure differentiates these cells from the large mononuclear and transitional cells of Ehrlich.

The non-granular cells are the source of much difficulty; but their due recognition is important for diagnosis. These cells have been crudely divided into small, medium, and large mononuclear forms, but more refinement is necessary because, at best, the classification still in vogue gives only an impressionist picture of the cell-forms.

The modern classification: So far we have referred to ten types of cells, of which seven are blood-cells proper. Careful cytological differentiation, however, provides us with at least thirty-four different forms, exclusive of an enumeration of the degeneration-forms of each variety. It is not proposed to discuss these forms, but the fact is mentioned to indicate the range of possibilities of variation of marrow-pictures in disease. Certain broad remarks are necessary, however. Granular cells may vary as follows: the nucleus may be indented to a varying degree,—the slight dimple indicates an ordinary myelocyte, a deep depression indicates a metamyelocyte, marked polymorphosis indicates the complete polynuclear leucocyte. Commencing acidophilia of the cell-body without definite neutrophilic granules indicates that we have a promyelocyte before us, a cell further back in the line of ontogenetic development. The stage still further back takes us to the non-granular cells. We have the mother cell, the large lymphocyte of older authors, the lymphoidocyte of Pappenheim. Here a small rim of basophile cytoplasm is noted, with a relatively large ovoid nucleus of variable basophili, but characteristic structure and nucleolar content. There may be definite, peripheral, chromatic marking visible in the tissue-sections. It is convenient to call this cell simply "mother cell," which serves the purpose of indicating its place in development and avoids the selection of one of the twenty-three names with which various writers have presented the same innocent cell. Between this cell and the promyelocyte it is possible to interpose a leukoblast stage whose nucleus is myelocytar in structure and whose cytoplasm is more abundant, less basophile, and contains, occasionally, azur granules,—a coarse, abundant granulation with azur dyes. This cell is also called a myeloblast by Naegeli*. The granules vary in size in different cell forms.

*The two are not absolutely synonymous.

Each of these cell-types includes varieties dependent on changes due to progressive ageing. They also differ during the stage of amitosis. The senile cells, whose body has swollen out at the same time as the nuclear matter shrinks in bulk, are easily recognizable. Some forms undergo pathological polymorphosis of the nucleus producing the cell known as a Rieder cell.

Another form of non-granular cell is the parent cell of the red cells: the lymphoid erythroblast. This cell is diagnosable by noting the commencing wheel-formation within the nucleus. There is no hæmoglobin present.

Summarizing the points relating to the non-granular cells, we have: the ordinary small lymphocyte of the blood-film, its leucocytoid form indicative of senile change; the large lymphocyte, or mother cell, with its leucocytoid form indicative of abnormal senility; the leucoblasts of ordinary size, parent forms, and of smaller size, second or more generation, with or without azur granulation; the promyelocyte of Pappenheim or premyelocyte of Dickson with a senile type,—the smaller indeterminate marrow cells of older writers. At one time such a cell is lymphocytiform, inas much as the nucleus is relatively large and the protoplasmic sheath relatively scanty and often hardly visible at all; at another time it is leucocytoid, by which is meant the ageing of the cell by shrinkage of the nucleus and increase in size of the cell-body. These, however, may usually be placed in one or other of the preceding groups. The erythroblasts of lymphoid form which include large, small, young, and old forms. These are differentiated into normoblasts, megaloblasts, and parent cells. Cells with clear cell-body and slightly polymorphous nucleus like the large mononuclear of the blood-stream, now differentiated as a monocyte and simulated by the Rieder pathological form of mother cell.

The degenerative changes which any or all of these cells may undergo are of vast importance to the diagnostician. We have the production of miniature cells from the attempt to rectify a palsy of normal cell production, dwarf myelocytes, dwarf lymphocytes, dwarf polynuclear leucocytes; the production of irritation cells of all kinds,—of lymphocyte-form, of large-lymphocyte-form, of leukoblast-form, and so on. We have also the production of eosinophile cells in which half the granules are mast cell in type. We have the appearance of fatty vacuoles in the cell,—both polynuclears and lymphocytes; we have the appearances of phagocytic cells; we have the appearances of cell-destruction in the form of vague shadows somewhat simulating lymphocytes—met with

frequently, by the way, in pus films; we have the presence of marked segmentation of the nucleus of the polynuclear leucocyte "caryorrhetic forms."

In several autopsies on cases whose cause of death was obscure, I have been struck with the fact that the marrow has shown an extraordinary degree of autolytic change. It seemed that if such a change occurred during the last hours of life, a fatal result might be precipitated from sheer liberation of complement or immune bodies in excess of margins of safety, aided to the utmost by entire stoppage of red and white cell-production. Lucibelli⁷ found that similar changes in the rabbit bone-marrow are induced by fatal injections of typhoid, colon, and paratyphoid bacilli (loss of staining power of cell, swelling of nucleus, irregular distribution of chromatin, folding of the nuclear membrane, karyolysis.)

VIII. MARROW-PICTURES*. The main types of changes in the marrow in different diseases are best appreciated by the study of photographs. In the absence of such, a few general remarks may be presented. A low power view of normal marrow shows engorged capillary vessels coursing between fat spaces of variable size, in the interstices of which there are clusters of the proper cells of the bone-marrow. The nature of such cells cannot be made out by the low power, save that the nucleated red cells stain more deeply than the others. When examined by the aid of the oil-immersion lens the chief cells seen are the myelocytes; a moderate number of small, round, deeply staining cells, the erythroblasts, is also seen. A succession of fields showing cells in these proportions would indicate a typical combined white and red cell formation.

Erythroblast reaction: In tissue showing an erythroblast reaction the number of normoblasts is relatively much greater, and frequently megaloblasts or even giantoblasts may be noted. In addition, a number of indeterminate cells of variable size may be detected. Such a reaction is well-marked in cases of septic infection in which there is a good response to the destruction of blood, as well as in anæmias due to any cause which does not paralyze red-cell formation. It is a constant finding in infants' marrow, as first shown by Lossen⁸.

Eosinophilic marrow: Here the successive fields in a marrow film present conspicuous numbers of eosinophile cells, easily seen by the bright red colour of the granulation. In the hospital series such a change was met with in severe septicæmias, and in a case of chronic nephritis. It is frequently met with in tuberculous cases,

*This portion of the paper has been abridged.

but eosinophiles are absent or very rarely seen in cases of typhoid and diphtheria. In pneumonia they are frequently scanty.

Lymphadenoid marrow: This form of change is of considerable importance, seeing that it is characteristic of lymphatic leukæmias, some pseudo-leukæmias, Hodgkin's disease, and, in a modified way, of aplastic anæmias. The cells are nearly all non-granular, vary much in size, and belong to the group of "mother cell." A similar phenomenon is also seen in bacterial infections in which there has been exhaustion of the marrow, with resultant leucopenia and lymphocytosis. Red cell formation is also frequently defective, shown by the small proportion of nucleated red cells.

This change according to Oehme,¹² Marfan, Bandouin and Feuillié,¹⁰ Hutinel and Tixier,⁵ is very strikingly seen in rickets. It occurs in a focal form, according to the hospital series, in some septicæmias, and in a wide-spread form in typhoid, tuberculosis, and in broncho-pneumonia of infants. Lossen,⁹ found the lymphoidocytes very numerous in children. Allied to this type is that met with in cases of Sternberg's leukosarcomatosis, where the tissue is occupied by densely packed round cells of medium size. These cells are entirely pathological in form, though they may be classified under the leukoblast series.

Degenerative marrow: The characteristic of such marrow is the prevalence of cells in various stages of degeneration, already referred to. Phenomena of this type are well-marked in the severe infections,—pneumococcic, streptococcic, and colon infections, gangrenous appendicitis, and typhoid. As already referred to, this change may be carried to the extreme of production of autolysis of the cells with liberation of the ferment granules, and solution of the cell-body. A finding of this kind is of profound significance in relation to the problem of the cause of sudden death during the course of severe toxæmias.

Megakaryocytotic marrow: In this tissue, the megakaryocytes are considerably increased in number. The relation of these cells to the blood vessels is variable. Some authorities aver that they are sessile upon the capillary walls, and dangle their long pseudopodic arms into the blood-stream, so that slight concussions may detach fragments of their limbs and cause them to appear as blood-platelets (Bunting).¹ This view is not accepted by every authority. The important point about these cells, in relation to the pathology of granulomatous formations elsewhere, lies in the appreciation of the heraldic sign of the cell type,—the nucleus,—which presents a loose, basket-like formation.

Megakaryocytes are scanty in cases of tuberculosis, cancer, chronic nephritis, and all bacterial infections. They were found to be very abundant in a case of aneurysm in which leakage had taken place for a considerable time. They are increased in pneumonia, septicæmia, and appendicitis. Degenerative changes in such cells are worthy of note.

Fatty marrow: In this case the fat spaces are not only increased in number, but the interstitial specific tissue is much diminished in amount. This is a physiological change in old age. In infections where the marrow tissue has been exhausted, the fatty tissue becomes preponderant as a compensatory change.

Fibroid marrow: The replacement of both fatty and formative tissue by a spindle-celled tissue, in which lie collections of small, round, inflammatory cells, occurs during the course of chronic inflammatory processes in the long bones. The marrow tissue proper is here replaced by the new cells. Such a change may be focal or diffuse, just as tuberculous or septic or luetic inflammations of bones may be focal or diffuse. If focal, areas of marrow tissue would alternate with the fibroid portions.

Gelatinous degeneration: The fat spaces are normal in number but the interstitial tissue between them is changed, having lost many of the specific cells and acquired a hyaline appearance. Gelatinous degeneration may be focal or diffuse, and may be associated with atrophy of the cancellous bone or may occur as an almost imperceptible change amongst the fine-meshed trabeculae of a rather ossified marrow cavity. It may or may not be associated with disseminated foci of formative or fatty marrow. This form is not identifiable in film preparations. It occurs in diseases associated with starvation-prolonged diarrhoea, carcinoma, or prolonged cases of suppuration.

IX. Many of the types of marrow change above referred to are the classical types. It may be noted, however, that it would be more correct to divide up the marrow changes into such groups as erythrotoxic, leucotoxic, myelophthisic, myeloplastic, erythroplastic, erythrodegenerative, leukodegenerative, and so on.

It has been found convenient to represent differential marrow counts in the form of charts, using squared paper on which each square starting from a base line represents a ten per cent. increment, passing from left to right. In the absence of figures, it would be confusing to explain this method of graphic representation in detail.

The correlation of marrow findings with the tissue-changes occurring at the same time in the lymph-nodes and spleen forms

too wide a subject for consideration in the present communication. The remarks which have been made will suffice to show some of the directions in which the study, even of the marrow alone, may be instructive to the clinician and clinical pathologists.

The observations made on the autopsy series at the Royal Victoria Hospital would go to show that our conceptions of the daily changes occurring in these hæmatopoietic tissues are remarkably incomplete, and demand very careful attention.

The problem of diagnosis from observations of the living marrow is a difficult one, and whether the results to be so obtained are of sufficient value or not remains to be seen. It is, however, likely that in certain cases the clinician would receive definite help, before pronouncing an anæmia to be definitely incurable or not. The value of this study in connexion with the elucidation of obscure autopsy cases has been sufficiently demonstrated on a number of occasions.

References:

1. BUNTING. *Johns Hopkins Hosp. Bull.*, 1910.
2. CARNEGIE DICKSON. "Bone-marrow," 1904.
3. GHEDINI. *Wien. Klin. Woch.*, 1910, p. 1840.
4. HELLY. *Fol. Haem.*, x. p. 163.
5. HUTINEL and TEXIER. *Fol. Haem.*, x., p. 117.
6. F. F. LEIGHTON. *Journ. Path.*, xv., 1911, p. 465.
7. LUCIBELLI. *Riforma Medica*, 1909, 2.
8. LOSSEN. *Fol. Haem.*, x., p. 149.
9. LOSSEN. *Ibid*, x., p. 148.
10. MARFAN, BANDOUI and FEULLIE. *Fol. Haem.*, x., p. 116.
11. MUIR. *Trans. Path. Soc.*, London, 1902.
12. OEHME. *Munich Med. Woch.*, 1909, p. 446.

WE learn from the *Globe* that the St. John Medical Society has published a tariff of fees. The publication, which bears the date 1912, states that the charges are not necessarily maximum or minimum, but average fees. Some of the fees quoted are considerably higher than those published in 1899. The practitioner is entitled to charge from two to three dollars a visit instead of from one to two dollars. The fee for the amputation of fingers or toes is to be from ten to twenty dollars, instead of five; and for resection of shoulder, wrist, ankle, etc., the fee is to be from one hundred to one hundred and fifty dollars, instead of from fifty to one hundred dollars.

PRESIDENTIAL ADDRESS

BY HERBERT A. BRUCE, M.D., F.R.C.S.

*President of the Ontario Medical Association; Associate Professor
of Clinical Surgery, University of Toronto; Surgeon to the
Toronto General Hospital*

[ABSTRACT]

WHEN it was first suggested that this association should become a branch of the Dominion Medical Association, many of us feared that in this way we might lose our identity. As the scheme has eventually materialized, however, I think it a distinct advantage to the Ontario Medical Association. Whilst we have retained our autonomy, and are thriving and prosperous, we are at the same time—I think I may say without boasting—the most important branch of the Dominion Association, and can feel that our interest is not merely provincial, but that we have a larger and wider outlook through our connexion with the national association.

I think it very desirable that there should be an increase in the number of small county medical societies, and I should like to suggest that for this purpose the province be divided into ten districts, corresponding to the ten health districts recently established by the provisions of the new health bill. As there are forty-seven counties in the province, this would mean that each society would include four or five counties, which appears to me to be a practical arrangement. Then the method of securing membership in the Ontario Medical Association would be simplified by accepting the members of these smaller societies, which would obviously be in a better position to determine their qualifications.

When the Ontario Medical Council was first established there were three licensing boards in Canada, in addition to the medical schools and universities; namely, the Upper Canada, the Homœopathic, and the Eclectic Medical Boards. The universities, in addition to conferring degrees, really possessed licensing power, inasmuch as the holder of a university degree was entitled to practise medicine on proving his identity and paying a small fee. The

Delivered at the Thirty-second Annual Meeting of the Ontario Medical Association, held at Toronto on May 21st, 22nd and 23rd, 1912.

provincial license enabled the holder of it to practise in the province conferring it, or in fact in any other province, so that as a matter of fact there were in Upper and Lower Canada, exclusive of the other provinces now constituting the Dominion, seven or eight licensing boards responsible to no central authority. On the establishment of the Ontario Medical Council it became the central authority and the only licensing body.

Before this time the schools and universities fixed their curricula, both for matriculation and professional examination; some of the licensing boards required no standard of matriculation at all, and the professional acquirements necessary to become a practitioner of medicine were of a very inferior character.

The first step taken to remedy this state of things was the "Parker Act," passed in 1865, providing for the formation of a council with power to fix the standard of matriculation and that of the medical curriculum, but giving it no power to enforce this standard. The Homœopathic and Eclectic Boards were not interfered with, and the provisions of the Act were found to be very defective. An arrangement was then made with the homœopaths and eclectics and the various schools and universities, whereby the whole of the profession became subject to the Medical Council of Ontario, as a central authority. This council was made up of representatives, elected from and appointed by the general profession, the medical schools and universities, and also from the homœopathic and eclectic bodies. This Act came into force in 1868, and conferred upon the council power to fix the standard of all examinations and appoint examiners to conduct them.

Prior to 1867 the matriculation examination of our colleges was simply a matter of form, and could be passed at any time before going up for the degree. Now it is equivalent to a second class teacher's certificate with compulsory Latin and physics and the science course. I believe that at the present time all the colleges and universities in the Dominion require four years of study before a student goes up for his degree, and in McGill University and the University of Toronto five years are required.

The president of the University of Toronto, in his last published report, suggests that the entrance standard for medicine in the University of Toronto shall be senior matriculation, which really amounts to the first year at the university, and I may say that recently the medical faculty has recommended to the Senate than an examination equivalent to that of senior matriculation shall be demanded of all students entering the medical faculty of the University of Toronto in future.

Last year the Ontario Medical Council very wisely decided to discontinue its primary and intermediate examinations, accepting the primary and intermediate examinations of the universities, and only requiring a final examination in medicine, surgery and obstetrics. As soon as the Dominion Medical Council comes into operation, it would seem unnecessary for the Ontario Medical Council to hold even the final examination, as a student would naturally prefer to take the examinations of the Dominion Medical Council, which would entitle him to practise in any part of the Dominion. This takes away one of the functions of the Ontario Medical Council, and while it may have other duties to perform of a sufficiently important character to justify its existence, I think there is a general feeling that its numbers might, with advantage, be greatly reduced.

The number of homœopathic representatives is altogether out of proportion. Through the courtesy of the registrar, Dr. Bray, I have learned that there are forty-eight homœopaths practising in the province, and three thousand two hundred and eighty regular practitioners. These forty-eight homœopaths have five representatives on the council, that is to say one to about every nine and a half. The three thousand two hundred and eighty regular practitioners have eighteen representatives, and if we add to these the six representatives from the colleges, making twenty-four altogether, we may say that they have one to every one hundred and thirty-six. Amongst the members elected from the colleges we find that there is a representative for Victoria University, for Trinity University, and for Ottawa University, none of which have medical faculties, and I can see no reason whatever why they should continue to have representatives on the council.

I would suggest that the Ontario Medical Council consist of ten members, one to be elected by the homœopathic physicians, and three to be elected by the universities having medical faculties, leaving six to be elected by the general profession. Even this gives the homœopaths a predominance in the council quite unjustified by their numbers, and with the diminished amount of work required from the Ontario Medical Council this should be a sufficiently large body.

MEDICAL EDUCATION. The question of medical education is at the present time receiving a considerable amount of attention, and both the teaching and practice of medicine are passing through a period of evolution. In the United States medical education has been a subject of discussion for a number of years, and committees

have been appointed by various societies, more especially the Association of American Medical Colleges, in conjunction with the Confederation of Examining Boards of the United States and the Council of Medical Education of the American Medical Association, to enquire into the equipment, entrance requirements, and curricula of the medical schools.

In 1905 the Carnegie Foundation was established by Mr. Andrew Carnegie to investigate the subject of university education in general, and a special committee was appointed to consider medical education in the United States and Canada. The report of this committee and the recommendations of the council on medical education of the American Medical Association show that the most urgent indications are reduction in the number of medical schools, elevation and uniformity of entrance requirements, maintenance of well equipped laboratories with capable teachers, and clinical training in a hospital in intimate relationship with the medical faculty; that is to say, in a properly constituted teaching body, there should be a hospital under the direct control of that body. The report of the Carnegie Committee also emphasizes the fact that the medical profession, both in the United States and Canada, is at present over-crowded by poorly trained physicians and surgeons.

At the meeting of the council on medical education, held at Chicago on February 29th of this year, the secretary reported that whereas in 1906 there were one hundred and seventy medical schools in the United States, constituting half the total number existing in the world, the number had now been reduced to one hundred and twenty. This reduction is due to the closing of some badly conducted and imperfectly equipped schools and the amalgamation of others.

As regards entrance requirements, Dr. Colwell stated at the above meeting that forty-seven of the one hundred and twenty remaining medical colleges now require that a year or more should have been devoted to physics, chemistry, and biology, together with a four-year high school course. Twenty-nine colleges require a minimum of two or more years' work in a college of liberal arts, with a four-year high school course. Nine state examining boards have adopted preliminary requirements in excess of a four-year high school education. Of the one hundred and twenty colleges, seventy-nine are connected with liberal arts colleges or universities, but of these, thirty-three only are in intimate relationship with universities. During the last seven years the college terms

have been lengthened, new methods of teaching adopted, more salaried teachers employed, more endowments secured, new buildings erected, better laboratories and laboratory equipment, and better clinical facilities provided. Several of the larger medical schools have been reorganized, have built teaching hospitals and adopted higher standards of education, and the teaching of medicine has now been placed, to a great extent, on a university basis throughout the United States.

As regards Europe, in London there is more clinical material available than in any other city in the world, and the conditions for teaching are most favourable, and in my opinion there is no place at which one can get a better training in the fundamental principles underlying the practice of medicine. This, together with the exceptional clinical facilities, makes London the greatest medical centre in the world. In the University of Berlin no senior professor practises medicine. The universities, which are maintained by the State, pay salaries to the professors, surgeons, and physicians, and also all expenses connected with the laboratories.

I am of opinion that, as education is a matter within the jurisdiction of the provinces of this Dominion, it is the imperative duty of the provincial governments to see that a certain definite standard of medical education is maintained, the individual medical colleges retaining their charters only if they continue to provide this standard. It will be their duty to see that these colleges are provided with proper laboratory accommodation and facilities, and—what is perhaps equally or more important—a sufficiency of clinical material in hospitals connected with or under the control of the college.

Medical education attains its maximum efficiency only when it is based upon a good system of general education, and is supported by the scientific and literary atmosphere of a university. Three of the greatest advances in modern medicine are due to laboratory work, namely, the work of Faraday in physics, of the Curies in chemistry, and of Pasteur in biology. Sir William Osler thinks it advisable that this type of university work should be extended into our medical schools, and that we need "an active invasion of the hospitals by the universities." In the city of Toronto we now have what may be described as "an active invasion of the hospital by the university," in that the University of Toronto now has control of the Toronto General Hospital, thus making the latter, to all intents and purposes, the university hospital. We have here what is generally recognized as the essential thing in the train-

ing of medical students, namely, the intimate connexion with and active control of the hospital by the university. When our new arrangements are in working order we hope to be able to give our students a great deal of clinical work in the hospital, so that they may thus have an opportunity of acquiring that familiarity with disease processes in the living subject which is so essential as a qualification for their life's work.

Medical education in Canada has always been up to a high standard. But in this connexion it should be borne in mind that, owing to the development of the preliminary sciences, such as physiology, pathology, and biology, the work of the student has practically doubled in amount, and is continually increasing. In view of this increased demand on the time of the student, a five-year course in medicine has now been adopted in all the leading Canadian medical schools, the final two years being devoted to practical work.

All writers on medical education emphasize the paramount importance of thorough training in practical work, with opportunities for the students to come into actual contact with patients. The efficiency of the practitioner, the welfare of the public generally, and the adequacy of the public health service, are all dependent upon the quality of the training given in the medical schools, and the ideal at which we are aiming is uniformity in the requirements and standards exacted by all the examining boards throughout the country. We trust that this happy result will follow the adoption of the "Canada Medical Act," establishing interprovincial registration, and a license which will enable the holder of it to practise in any part of the Dominion.

THE "CANADA MEDICAL ACT." The "Canada Medical Act," which has for its object the establishment of a uniform standard of examinations and qualifications throughout the Dominion of Canada, was introduced in the Senate by Dr. Roddick in 1902. It was passed, but it was found impossible to bring the Act into operation at that time, owing to the fact that opposition was made by some of the provinces on the ground that their interests had not been sufficiently considered.

Owing to Dr. Roddick's perseverance and devotion to the work in connection with this Bill, and that of a few others who coöperated with him, he succeeded in convincing the various provinces that it was to their interest to pass this Bill, and consequently an amended Bill was passed in the 1911 session of the Dominion Parliament. I wish here to express my sense of the debt of gratitude which we owe to Dr. Thomas G. Roddick for

the unprecedented services which he has rendered to the entire medical profession of Canada.

This amended Bill only became operative when a so-called "Enabling Clause" had been passed by every province. All the provinces have now passed this "Enabling Clause," Ontario being the last to do so. This means that now the "Canada Medical Act" is in operation, and it only remains for the Dominion Medical Council to be established in accordance with the terms of the Bill, which are briefly: That the council shall consist of (a) three members, appointed by the Governor-General in Council, each residing in a different province; (b) Two members representing each of the nine provinces, to be elected by the provincial medical council; (c) One member from each university or medical college, which has power to confer degrees in medicine; and (d) Three members elected by the homœopathic physicians in Canada.

OSTEOPATHY. The Bill which was recently introduced by Dr. Jamieson, and which was withdrawn at the last session, contained a clause defining medicine, which it is to be hoped will be incorporated in a Bill which will probably be passed at the next session of the legislature. It is a great pity, as we all know, that this was not defined by the legislature many years ago, when the council was established in 1867, and it is desirable that the profession should be thoroughly conversant with the terms of this Bill.

The Bill provides for the registration of any person who has matriculated in accordance with the requirements of the College of Physicians and Surgeons of Ontario, and holds a diploma granted by a school or college of osteopathy recognized by the American Osteopathic Association, and has attended such osteopathic school or college for the time specified in the Bill. It also provides for the registration of persons who have been practising osteopathy in Ontario prior to the passing of the Bill, provided they hold such diplomas. It also provides that any person shall be held to practise medicine within the meaning of the Act who shall by advertisement, sign, or statement of any kind, allege ability or willingness to treat diseases, or to prescribe or administer medicines or treatment of any kind for diseases, defects, deformities, or injuries, but specifies that this section does not apply to the practice of dentistry, pharmacy, the usual business of opticians, vendors of dental or surgical instruments, apparatus and appliances, nurses, chiropodists, bath attendants or proprietors. Every person registered under this Act as a practitioner of osteopathy in the province of Ontario shall be entitled to recover fees for professional attendance.

This amendment to the "Ontario Medical Act," which permits of the registration of osteopaths, is not such a monstrous thing as it seemed at first. I take the view that a man is justified in practising any pathy he wishes, provided he has obtained a sufficient knowledge of the anatomy of the human body, its physiology, and the disease processes to which it is liable. It will be obvious to every sane man that such a knowledge is absolutely essential; for how can any one attempt to treat a disease without understanding the nature of the disease in question or normal conditions?

At the present time the public is at the mercy of a large number of uneducated charlatans, whose work is not only of no value in any real disease, but is often of a highly dangerous character. We have all met with cases in which this lack of knowledge has resulted disastrously to the unfortunate patient.

If, as is proposed in the Bill, those wishing to practise osteopathy must pass an entrance examination equal to that of any practitioner of medicine, and in addition pass a primary and final examination, which would include all the essential subjects, substituting their pathy for medicine, we should have no objection to their being licensed by the Ontario Medical Council. In this way the public would be protected by requiring of osteopaths a sufficient knowledge of these fundamental subjects, which is absolutely essential before attempting to treat the sick. If, after they have passed these examinations, they still think there is any value in their particular pathy, we have no objection to their practising. I would take a similar attitude towards any other pathy.

When the Ontario Medical Council was organized the homœopaths and eclectics were taken in and the same examinations prescribed for them as for regular practitioners. What has been the result? The eclectics have practically ceased to exist. Very few homœopaths have been taking the examinations, as is shown by the fact that at the present time only forty-eight are practising in the province of Ontario, but unfortunately I am unable to ascertain how many there were at the time of the formation of the Ontario Medical Council.

The only objection I have to the Bill is that it proposes to take in a number of graduates of certain American colleges without passing any further examinations. I think that a clause should be added requiring all these men to pass an examination before being registered, and although we may, for the time being, have to accept qualifications which are decidedly less than those which will be exacted from future candidates, we shall certainly have

made a material advance in securing for the public very valuable protective legislation.

In support of the contention that those who are practising osteopathy at the present time should pass an examination, I should like to briefly refer to the Carnegie Report. Amongst medical sectarians the committee includes homoeopaths, eclectic, and osteopaths, all of whom admit in theory that medical education should be based upon the fundamental sciences of anatomy, physiology, pathology, and bacteriology. It is stated that the catalogues of the eight osteopathic schools in the United States are a "mass of hysterical exaggerations, and fairly reek with commercialism." Entrance standards are conspicuous by their absence. In the catalogue of the parent school at Kirksville it is stated that an applicant will be accepted if "he pass examinations in English, arithmetic, history, and geography," but he may be admitted even if he fails to do this. The Cambridge school (Massachusetts) states that "a diploma may be accepted or an examination required if deemed advisable by the directors."

Whatever his opinions may be on the subject of treatment it is essential that the osteopath should be trained to recognize and to differentiate between the diseases he professes to treat, and not one of these osteopathic schools is in a position to give the training in physiology, pathology, chemistry, and bacteriology which "osteopathy itself demands." In none of them is there any effort to connect the "laboratory teaching with clinical osteopathy," and in none is there "anything approaching the requisite clinical opportunities."

In the eight osteopathic schools there are now over thirteen hundred students, paying about \$200,000 annually in fees, and for this they "receive an education which is practically worthless."

All candidates who intend to practise surgery—whether osteopaths or not—should be required to pass a uniform examination in this branch of treatment. It is absolutely essential that all who undertake the treatment of disease, irrespective of the form of treatment they propose to adopt, shall be educated in such a manner as to render them capable of distinguishing between the various diseases which may come under their observation.

PUBLIC HEALTH. The rapid development of bacteriology, and the establishment of the germ theory of infective diseases, due mainly to the scientific investigations of Koch and Pasteur, have led to corresponding development in practical and preventive

medicine. Recognizing the importance of this development in relation to public health, Senator Owen, of Oklahoma, introduced a Bill in Congress about two years ago to provide for the creation of a Federal Department of Public Health, which was strongly supported by the American Medical Association and various other medical societies in the United States.

The object of this Bill was defined to be "all matters pertaining to the conservation and improvement of public health, and to collect and disseminate information relating thereto." It also provided that the new Department of Public Health should include: (1) The Public Health and Marine Hospital Service; (2) Foods and drugs, from the Bureau of Chemistry, which is now in the Department of Agriculture; (3) Vital Statistics, now in the Department of Commerce and Labour.

An amended draft of the Owen Bill has recently been brought before the Senate, which differs from the original Owen Bill, in that it provides for an independent health service, at the head of which will be a director appointed by the president, but who is not to have a seat in the cabinet, whereas the original Owen Bill specified that the head of the department should be a physician, who would also be a member of the president's cabinet. The amended Bill provides for the appointment by the president, with the approval of the Senate, of three commissioners of health, to act as assistants to the director, two of whom shall be skilled sanitarians and one a skilled physician.

On March 22nd, of the present year, Senator Smoot brought a Bill before the Senate, which contains practically the same provisions as regards the federal government, but varies essentially from the Owen Bill, in that it arranges for the public health service to be under the control of the secretary to the treasury, and to be managed by an assistant secretary, who shall devote the whole of his time to public health work, thus ensuring representation in the cabinet. The Medical Bureau, including the present Public Health and Marine Hospital Service, is made the predominating bureau, and it is proposed to transfer vital statistics to this department.

I have referred to this contemplated legislation in the United States in order to show what is being done elsewhere in regard to public health matters. Many of us have felt for years that a Federal Department of Public Health should be created, with a responsible minister at its head, and representations were made to the late government by the Canadian Medical Association along these lines, but no action was taken.

I intend proposing a resolution to this effect during the course of the meeting, urging the Dominion government to give this matter early and favourable consideration.

Early in the present year the Academy of Medicine, New York, appointed a committee on public health, hospitals, and budget, for the purpose of investigating existing conditions, and to give expert medical opinion upon various matters, including provision for contagious diseases, school sanitation and the use of public funds in the maintenance of public health, one of the most important being the consideration of the health of school children. The committee is not to interfere in political matters, but to endeavour to give advice as will be serviceable to the community as a whole. This will include attempts to educate the laity to minimize conditions which tend to the spread of occupational diseases, and to educate general practitioners in matters relating to municipal health, sanitation, and hygiene. We might with advantage follow their example.

DIVISION OF FEES. Considerable attention has recently been directed, more especially by the various medical and surgical societies throughout the United States of America, to the prevalent practice of fee splitting, or the division of fees between consulting surgeons and physicians, or physicians and consulting physicians.

Judging from the papers which have recently been published, and the reports of the committee which have been appointed to enquire into the subject, this reprehensible practice appears to have become exceedingly common. It is increasing to an alarming extent amongst the younger members of the profession, and has even been adopted in some cases by men of good standing, owing to the fact that it suits their convenience and that they find it profitable.

The division of the fee is accomplished by various methods, and is based on commercialism alone. It means nothing more or less than the payment by the consultant of a commission to the general practitioner, with the object of encouraging the latter to continue to send patients where he is most likely to receive a share of the money paid for relief or attempted relief, irrespective of the skill and experience of the consulting surgeon or physician in question. The practice is even more common amongst surgeons than physicians, and is carried on without the knowledge of the patient, who is ignorant that a portion of the money, amounting, according to the report of the committee of the Erie County Medical Society, to from twenty-five to fifty per cent., goes to the general practitioner who has recommended the surgeon.

There can be no question that it is a pernicious system, fundamentally opposed to the ethical traditions of the profession, and that it cannot be advocated by any honourable man. It represents a form of collusion between the consultant and the general practitioner, which is compromising and demoralizing to both parties, in that it is invariably practised without the knowledge of the patient, and is at the same time disadvantageous to the latter.

As regards the causes responsible for the prevalence of this evil, it is stated in the report referred to above that the committee was practically unanimous in the opinion that the principal predisposing factors in commercialism are the over-crowding of the medical profession, a low standard of medical education, and a lack of appreciation of professional ethics. The committee also includes amongst the contributory causes, contract practice and its inadequate remuneration, and the fact that the general practitioner is often under-paid. This state of things should be rectified in a legitimate manner, by educating the public to understand that, in view of the advances in medicine and surgery, and the consequent increase in responsibility and work necessitated by modern methods of diagnosis, the general practitioner is justified in demanding a larger fee in such cases. He frequently has to take his patient to a consulting physician or surgeon, and if an operation has to be performed he has to be present. It goes without saying that he should receive adequate compensation for such services, and it is unreasonable to expect him to spend his time in this way without remuneration. In spite of the increased cost of living, and the advances in medical and surgical science, the family practitioner is still receiving the same compensation as his predecessors of two or three generations ago. If the public will compensate the family physician fairly and promptly for his services, and insist that all transactions between the physician and the consultant be carried on with the full knowledge of the patient, the cause and the possibility of this evil will speedily disappear.

The committee also points out that the prospect of receiving a commission sometimes results in exaggeration of the necessity for operation, and thus leads to indiscriminate, reckless, and useless surgery, performed in some instances by inefficiently trained and inexperienced surgeons. Although the general practitioner is assumed to recommend his patients to consult a competent surgeon, the possibility of receiving fifty per cent. of the fee may interfere with his discrimination.

It was suggested at the meeting of the board of regents of

the University of New York, held on April 19th, 1911, that the legislature be requested to consider the advisability of prohibiting the consulting physician or surgeon from paying fees to another practitioner without making known the fact of such payment to the patient or the relative or friend acting on his behalf; and also that it might be advisable for the board of regents to announce that it will revoke the licenses of physicians or surgeons determined to have been guilty of this practice.

Dr. A. S. Draper is of opinion that correction of the evil must come from within the profession itself by means of the local organizations, and that if this is not done the public will probably take the matter into its own hands with painful results.

The Academy of Medicine, Toronto, appointed a committee to consider this question, and the following resolutions were passed at the annual meeting on May 7th of this year:

1. "That the payment of a commission to any person or persons who may be instrumental in influencing a patient or patients to apply for professional advice is wrong in principle, and detrimental to the best interests of our profession."
2. "That when two or more practitioners are engaged in a case, the disposition of the respective fees shall only be made with the knowledge and consent of the patient."
3. "That we agree that the attending physician has often been inadequately paid for his services."

I would suggest that this matter be dealt with by this association at the present meeting, and that a similar action be taken to that of the Toronto Academy of Medicine.

Case Reports

ANOMALY OF THE VAGINA AND UTERUS

THE following case seems unique according to the literature convenient to my hand, and in the presentation of it I venture a query. Mrs. R., aged twenty-seven, a Canadian of good family, married a year and eight months, called me in the early morning of May 18th, for hæmorrhage and pains in the back and pelvic region.

Her history is of the very best. She never was seriously ill in her life except with typhoid fever at ten years of age. She has, however, at times had slight stomach attacks with palpitation, but she is essentially of a high-strung and nervous disposition. There is no history of any deformity or malformation in either her father's or mother's family. Her menstrual periods have always been irregular from the beginning, varying from four to six weeks, and have been accompanied by more than the usual pain and discomfort.

The last menstrual period began February 26th last, so that, apparently, pregnancy was advanced somewhat over two months. There was experienced during this period the usual nausea, but otherwise she "never felt better in her life."

On Tuesday afternoon, May 16th, while out of doors she felt a slight hæmorrhage. No more was experienced until next morning, when slight hæmorrhage began again and continued all day and all night with two attacks of colicky pain. When I was called, the hæmorrhage was marked but not profuse. Everything pointed to a miscarriage, but on attempting examination per vaginam, found the excessive nervousness a bar to any certainty of diagnosis. However, as the hæmorrhage increased during the next three hours, I called Dr. A. Wolverton Mair as anæsthetist and prepared to remove the products of conception in the usual way.

On introducing one finger I found the products of conception in a sack which seemed to be a small uterus, but whose cervix seemed too largely dilated and strangely near the vulva. These products contained no fetus, but a mass of what seemed membranes and placental tissue. I could get no history of anything having been lost. The strangeness of the feeling of the parts led me to

examine more carefully visually and manually, when I discovered the following condition.

There was a ring of tough tissue at the opening of the vagina, which was in the usual situation. This vagina was nothing but a cul-de-sac and about the usual length. In the left-hand side of the ring was the small opening into the second vagina, and it was in this left vagina that the products of conception were found. This vagina was shorter than the other and led to a well-formed uterus whose cervix was small and had no semblance of any dilatation and whose length appeared to be the usual two and half inches. To the right of this uterus there was a tumour, which appeared to be the other half of a double uterus, but having no connexion with the right vagina, and whether it has any connexion with the left uterus, by opening into it, I cannot say. Dr. Mair examined with me and he agrees that no products of conception had ever been in the left uterus. The recovery of the patient was speedy and uneventful.

The pertinent query to me is this,—could conception have taken place in the left vagina apart altogether from the uterus, or could this vagina have in any way partaken of the character of a uterus as well as a vagina, and why did products of conception remain as long as they did without aborting?

Fort William

OSWALD C. J. WITHROW

At a meeting of the Halifax Board of Health, which took place May 30th, the question of the admittance to the hospital for infectious diseases of patients from the military and marine and fisheries departments was again discussed. Surgeon Colonel Foster considered that in an emergency the military authorities could look after the women and children suffering from contagious diseases, but that the rank and file should be permitted to enter the hospital. It was decided to extend to the military department the privileges which they had formerly enjoyed, and that thirty days' notice of the termination of the agreement should be given in case of men, and twenty-four hours in the case of women and children. Mr. Harvey asked that the former arrangements might be continued with the marine department; he stated that there had only been three cases of infectious disease in fifteen months. The marine agreement was left unchanged.

Editorial

AN UNFORTUNATE INCIDENT

FROM time to time adverse criticisms have been heard regrading the National Sanitarium Association at Muskoka and the mode of its conduct; but "charity covers a multitude of sins," and realizing that the sanatorium at Muskoka is the pioneer institution of its kind in Canada, and that it has undoubtedly done much, both directly and indirectly, to stimulate an interest in the care and cure of early cases of tuberculosis, we have been willing to believe that a fuller knowledge would show the criticisms to be unjust. At most, being convinced that tuberculous patients are best treated in their home neighbourhood, and that it is impossible for those of moderate means to travel hundreds, not to say thousands, of miles to the "Kurort," we have objected to an institution taking to itself the name of "National" when its function can only be provincial, and to that institution seeking and obtaining funds in other provinces, and so diverting funds from local institutions of the same order. Such conduct, however, may be regarded as human, and it may be urged in extenuation that pioneers in a great movement, as enthusiasts, are apt to have large views regarding the scope of their work.

But there has occurred, within the last few weeks, an incident which must cause the Muskoka institution to be criticized by all other right-thinking medical men, an incident which shows luridly that those in control at the Muskoka sanatorium, regard their medical coadjutors not as fellow-workers in a great cause, but as servile instruments necessary, it may be, for the commercial success of the undertaking, but otherwise unworthy of consideration.

Dr. Alfred H. Caulfeild, a most capable graduate of Toronto University, had entered with enthusiasm into the study of tuberculosis, combining exact clinical with pathological research. His investigations were first conducted at Muskoka, and later, as the work developed, he studied in Germany, obtaining results of first importance which were communicated to the Royal Society; other papers have been published on these pages, in the *Archives of Internal Medicine*, and the *Journal of Medical Research*. As a result of his admirable studies, on his return to this country he was asked to assume, and he assumed, the directorship of the pathological department of the National Sanitarium Association, a post which, if we mistake not, was created for him. As a man of high standing, he objected, and objected rightly, to his work being extensively advertised in the lay press in a manner which was not ethical. As, contrary to his wishes, this advertising continued, there was no alternative but resignation, and accordingly, following the terms of his contract, he gave six months' notice. The answer to this notification on his part was an immediate termination of the engagement: an official of the board went to the laboratory, dismissed Dr. Caulfeild's assistant, closed the laboratory, and ordered the laboratory servant to leave the grounds that very day. Dr. Caulfeild went to Toronto forthwith to register a formal objection. On his return to Muskoka he found that all his work had been destroyed: his cultures, many of which he had been studying for long years, had been killed by the application of bichloride of mercury; and his extracts, toxins, and anti-serums were irretrievably ruined by the same procedure.

For so barbarous an outrage there is no conceivable excuse. At the meeting of the Ontario Medical Association held in Toronto during the last week in May, the following resolution was passed; it was moved by Dr. McPhedran and seconded by Prof. Leathes: "Resolved that this Association, representing the profession of Ontario, desires to place on

record its emphatic condemnation of the destruction of the cultures, extracts, and other biological products, representing many months' work of the physician in charge of the department of scientific investigation in the National Sanitarium Association."

We can only repeat that an institution whose directors act in the manner above indicated cannot possibly receive the sympathy and support of the profession, or of other humane and charitably disposed persons.

AMERICAN SURGICAL ASSOCIATION

FOR the first time in its history, the American Surgical Association held its meeting outside of the United States. It is perhaps not unreasonable to think that in making Montreal their place of meeting for the year 1912, they desired to pay a compliment to the few Canadian members of the Association, and it may safely be said that the compliment has been greatly appreciated.

For many years the work of the American Surgical Association has entitled it to rank with the great surgical societies of Germany and of France. The quality of work at the recent session served, putting it briefly, to maintain its high reputation. The character of the papers upon bone and joint surgery, was outstanding in quality. It may be unwise to single out any contributor in particular, but the writer cannot refrain from expressing a feeling of great admiration for the paper of John B. Murphy of Chicago; and this was very clearly the feeling of all the members present. It has been remarked that the surgery of bones and joints, which thirty years ago constituted the great bulk of both practical and scientific surgery, and which since in comparison with abdominal work has suffered somewhat from neglect, is now coming into its own again. This saying finds its proof in the kind and quality of the contributions to the recent meeting.

It is unnecessary to refer in further detail to the various items on the programme, but one may reasonably call the attention of Canadians to the paper of Dr. Alexander Primrose, of Toronto, who happened to be the only one of the four Canadian members to find a place on the programme. Dr. Primrose read an extremely interesting paper on "Hæmorrhage into the peritoneal cavity caused by accidental rupture of the ovary." His observations excited considerable interest and provoked discussion. He drew particular attention to the fact that the rupture of a graafian follicle during menstruation might be a source of very considerable hæmorrhage into the peritoneal cavity, and might simulate the signs of acute appendicitis, or else be a coincidence with an attack of acute appendicitis.

Dr. Armstrong, of Montreal, took part in the discussion on the method of anæsthesia by intratracheal insufflation and contributed a valuable series of observations on about fifty cases.

The weather was, unfortunately, bad throughout the meeting, but the visitors appeared to enjoy their stay in Montreal.

DR. BRUCE'S ADDRESS

WE take the liberty of saying that the presidential address which was delivered by Dr. Bruce before the Ontario Medical Association, was the most masterly which has been given before any association for a long time. After a graceful introduction, in which the clinical nature of the meeting is referred to and mention made of the untimely death of James F. W. Ross and James Bell, the president gave what was in reality a political history of the profession of medicine in Ontario, with due reference to Dominion affairs as well. Another important section was that which dealt with medical education and the licensing of practitioners whose methods leave them outside the regular ranks. It is these portions of

the address which we have selected for publication, although this by no means implies that we are insensible to the merit of the remainder. The conclusion was an admirable survey of the progress of medicine for the year in all its departments, and, so we are informed, will be duly published in the various excellent journals which are issued in Toronto.

ASSOCIATION MEETING, EDMONTON

THE occasions on which the meetings of the Association have been held in the West are so few that more than usual interest is being taken in this year's annual session, particularly as the meeting-point is in the rising city of Edmonton. The facilities for going west are each year becoming easier; nevertheless, a large number of members have yet to make their first trip to the district west of Winnipeg. The prairies and the plains at the season of the year when the meeting is held will demonstrate to the visitors the wonderful resources of Canada, and the reason why the eyes of the world are now centred on our western country. It will show to the profession the great opportunities there are in these western lands, where many new towns are each year being built. Members can also embrace the opportunity, being so close to the Rocky Mountains, of visiting the points of beauty that are so famous the world over.

The arrangements with the railway companies are: that members attending the convention,—and this will include their wives,—will get single fare for the return journey, providing there is an attendance of one hundred from all over Canada. That number will be easily obtained, so that no more favourable opportunity for an outing can be offered the profession, one combining business, a holiday, and a pleasure trip. The single-fare rate is being made by the direct route to Winnipeg and Edmonton; or the delegates can travel by the lake route, landing at Fort William, thence by rail, at a slightly additional figure to cover the cost of the meals

and berth furnished on the steamer; or the members may go or return via Chicago. Beyond Winnipeg the route is by the direct line to Edmonton, or via Calgary, or the traveller can go one way and return the other.

Each member when starting on the journey must take a receipt from the ticket agent for the fare paid, which receipt will be filled in and signed by the secretary of the Association, at Edmonton, and on surrender of it to the railway company there, a ticket to return to starting-point will be furnished, without charge.

At Calgary and Edmonton there are cheap return rates to Banff, Lake Louise, Field, and Glacier, so that those who are not inclined to take the trip to the Pacific coast can, nevertheless, visit these places in the Rockies.

Those who desire to make a prolonged holiday, and to vary the trip, are recommended to take advantage of the summer-tourist-rate tickets now being sold by the railway companies. The following table will give the members some idea of what these trips and rates are.

	Edmonton single fare	Vancouver Victoria Seattle Portland	Portland	San Francisco Los Angeles
		Going C.P.R. and returning via Koot- enay and Crows Nest route or via Chicago	Going C.P.R., re- turning via O.W.R. and N. Co., Spokane and Crows Nest route, or via Chicago	Going C.P.R. return- ing Salt Lake and Denver or Santa Fé route, (for Grand Canon) and Chicago
Halifax	\$72.50	\$135.70	\$135.70	\$150.70
St. John	67.50	127.20	127.20	142.20
Quebec	63.05	114.10	114.10	129.10
Montreal	59.05	106.75	106.75	121.75
Ottawa	55.65	104.85	104.85	119.85
Kingston	54.00	102.05	102.05	117.05
Toronto	49.10	93.85	93.85	108.85
London	49.10	93.85	93.85	108.85
Hamilton	49.10	93.85	93.85	108.85
Port Arthur	36.50	66.25	66.25	72.50 (return- ing direct
Winnipeg	23.80	66.25	66.25	72.50 to Chi- cago only.)

All the members, except those who desire to prolong their journey to the coast and come back by the States, are urged to buy their tickets on the convention certificate plan, being careful to take a receipt from the ticket agent for the fare paid. Those who perhaps have only a short distance to go, and who may think it unnecessary, in view of the small expense, to take their tickets on this plan, must remember that it is still very necessary to do so, in order that the total number of convention certificates may certainly reach the required number of one hundred.

Certain details concerning the expense of side trips to the Yellow Stone Park, of the Grand Canyon of Arizona, were printed in the June number of the JOURNAL, and members who contemplate one of these trips may consult that issue.

Addendum. The railways have lately amplified the previous arrangements as follows: Return limit: standard convention certificates, properly filled in and executed, to be honoured at Edmonton up to and including Thursday, August 29th, for tickets for the return journey bearing final transit limit, Thursday, September 5th, 1912, on which stop-overs will be allowed at points west of Port Arthur, Ont. (instead of return limit of August 31st, continuous passage, previously announced).

TYPHOID FEVER IN PORT HOPE

THE report of Dr. Amyot, provincial analyst, gives the following information in regard to the cause of the recent outbreak of typhoid fever in Port Hope. The investigation was commenced on March 8th, 1912. With the assistance of physicians in the town, information was obtained in regard to twenty-nine cases of the disease, all of which—with the exception of one—had developed since the beginning of February. The cases developed in different parts of the town and had had no special communication with each other; none of the cases had been exposed to infection from other

cases, so far as could be ascertained. The sanitary conditions in the homes of most of those suffering from the disease were fairly good, and only in a few instances could they be considered as possible sources of infection. The cases had all partaken of town water at some time during the three weeks preceding the onset of the disease, and several had been in the habit of drinking well-water. Samples of the water from these wells were examined with the following result: (1) 360 bacteria per c.c., 37 parts chlorine per million; (2) 750 bacteria per c.c., 45 parts chlorine per million; (3) 2000 bacteria per c.c., 40 parts chlorine per million; (4) 800 bacteria per c.c., 24 parts chlorine per million. In none of the samples were bacteria of intestinal origin found.

The sanitary conditions existing in factories where several of the cases were employed, were found to be far from perfect. These factories employ water from the harbour to supply part of their plant, and, by turning a valve, either the town water or the harbour water can be used in the same pipes; the taps from which the harbour water is taken are in close proximity to those distributing the town water. Of course, the danger from such an arrangement is great, as one tap may easily be mistaken for the other and the impure water used for drinking purposes. Severe outbreaks have been known to occur in the United States from similar arrangements.

A report was also prepared concerning the milk supply. A significant feature of this report was the presence of the colon bacillus in the domestic water supply of one of the milk vendors. A case of typhoid was also discovered in a family in the country; this family possessed a dairy herd and part of the milk was sold in the town.

A most dangerous source of infection, and possibly the cause of the present outbreak, is a stream which drains a large portion of the land above the Grand Trunk station, the cattle yards, and surrounding houses. The use of water from this creek, and from similar streams, is fraught with the greatest possible danger. We are glad to note that, at a meeting of

the Board of Health, which took place May 3rd, it was decided that a sewer should be constructed immediately to drain this part of the town and thus eliminate the possibility of further infection, at least from this source. The wells in this locality constitute another source of danger to the health of the citizens, and it is recommended that they be closed up and filled with town water, which usually contains less than one hundred bacteria per c.c.

A CURIOUS reason has been given for not attending the Edmonton meeting of the Canadian Medical Association, in August. It has been thought that by doing so risk would be incurred by those who are subject to hay fever. Any possible precaution against this distressing and unpleasant malady is to be commended, but a journey to the western part of the Dominion would constitute a cure rather than a danger of contracting the disease. Hay fever and asthma, so we are informed by Dr. Whitelaw, are distinctly rare in Alberta, and may be said to be non-existent there when compared with eastern Canada. Hundreds of people, now living in the west, are entirely free from attacks, who, every summer, invariably suffered severely from the disease when living in eastern Canada. These people cannot return to the eastern part of the country during the summer without suffering from a recurrence of the attacks. The assurance may be given, therefore, to any members who hesitate to attend the meeting in Edmonton, that, with few exceptions, they will find their symptoms much alleviated, or entirely absent, as soon as they are west of the Great Lakes. That they will continue to be free from attacks on their return to the east cannot be guaranteed, even by the profession in the optimistic west.

THE ONTARIO MEDICAL ASSOCIATION

THE thirty-first annual meeting of the Ontario Medical Association was held at Toronto, on May 21st, 22nd and 23rd, 1912. The president, Dr. Herbert A. Bruce presided, and there were present three hundred and sixty-one registered members, over one hundred in excess of the attendance at any previous meeting. Of these about one hundred registered as full members and thus became members also of the Canadian Medical Association. The meeting marked a departure from the usual programme of such meetings, in that, aside from those in the general meetings, only one or two papers were read. In their place case reports were read, and cases presented both by Toronto members and members from outside the city. This innovation followed the idea of the committee that a purely clinical meeting would be more practical and instructive than the usual series of didactic papers.

In the absence of Dr. William Alden Turner, of London, England, who was to have given the address in medicine, Dr. J. T. Fotheringham read the paper which he had prepared on "Some aspects of neurology to general practice." An abstract appears below.

In neurological cases, although careful bedside examination may mean complete diagnosis, yet in many cases laboratory aid cannot be dispensed with. By lumbar puncture and examination of the cerebro-spinal fluid, cellular and bacterial elements may be examined and valuable information obtained as to the source of infective processes, although the mere finding of polymorphonuclear leucocytes does not necessarily prove the existence of suppurative meningitis. Bacteriological examination of the fluid in serous meningitis, cerebral tumour, and hydrocephalus, will distinguish them from meningitis, notwithstanding the similarity of symptoms. The discovery by Widal, Sicard, and others, that the lymphocytes increase in the cerebro-spinal fluid of paralytic dementia and tabes dorsalis is of great value in clearing up cases which are obscure, while the fact that the Wassermann test is frequently positive in these cases adds a further reaction of importance to diagnosis.

In cases where it is difficult to say from the physical signs alone (Argyll Robertson pupil, altered reflexes, etc.) whether the symptoms are functional and temporary or not, the Wassermann has been

valuable. Positive in the blood serum of such a case, it would be merely an indication of the constitutional state. When, however, it is positive in the cerebro-spinal fluid and is associated with lymphocytosis, a diagnosis of parasyphilis, probably paresis, can be made with confidence. The number of positive Wassermann's found in tabes dorsalis varies with different observers from ten to fifty per cent.

Lumbar puncture, as a therapeutic method, is limited in value, since its application is practically limited to meningitis.

Sero-therapy in cerebro-spinal meningitis appears to have been successful when applied early. In poliomyelitis, although the infection seems to be similar, results with curative sera and vaccines are discouraging. In the meningitides secondary to ear disease, vaccines have their place as auxiliaries to operative treatment. Autogenous vaccines should be prepared and employed in all of these cases.

Röntgen rays find little application for their use in diseases of the nervous system. At the same time, an interesting recent observation has been the fact that, by such means it was discovered that a cervical rib may be the cause of muscular atrophy. By the aid of the bismuth meal and x-ray in cases of neurasthenia accompanied by gastro and enteroptosis, the stomach and intestines may be examined accurately as to size, shape, position, and motor actions.

BROMIDES IN EPILEPSY. A strong feeling exists in the popular mind that bromides in epilepsy are not only useless, but actually harmful. Before 1857, the date of the introduction of bromides, many cures were reported by the users of such drugs as zinc oxide, silver nitrate, and belladonna. Modern statistics differ from these very little. Writers such as Pierce Clarke, argue that hence bromides are neither necessary nor desirable.

The actual effect of bromides in epilepsy is variable and uncertain. In perhaps twenty-five per cent. of cases the attacks are either temporarily or permanently arrested. This class probably includes the spontaneously curable cases of the disease and here bromides are desirable. In a second group amounting to a further twenty-five per cent. the fits become less frequent. This may be looked on as the common, temporary result of bromide treatment. In a third group, composed of fifty per cent. of all cases, bromides either have no effect or else an absolutely deleterious one. Certainly all cases of recent origin should be given the benefit of the remedy for a time, although, in addition, occupation and general physical and mental hygiene should be attended to.

There are two age periods when "growing out of" may be looked for in epilepsy. The first is the period of childhood, between five and eight, in those whose fits commenced in infancy. A second is between the age of twenty-one and twenty-six, in those whose fits commenced during puberty. The climacteric period has little or no effect on the disease, and the same may be said of the establishment of the catamenia. The idea that marriage and pregnancy influence its course favourably is, as a rule, erroneous. The influence on the offspring of such a union is more marked than upon the individuals primarily concerned, since it is unlikely that all will escape.

MIND AND BODY, HYSTERIA. In the past, the close and all-pervading inter-relation between mental and physical symptoms has been largely disregarded. No physical disorder, however slight, fails to produce at least some effect upon the mind, while, on the other hand, the course of any acute disease depends largely on the attitude which the patient takes regarding it. Often the "ipse dixit" of the physician will dispel grave fears, although in other cases such doubts and fears may be actual manifestations of disease, as in genuine hypochondriasis.

The effect of emotion upon physical conditions has been ingeniously shown by the experimental researches of Rawlson on the salivary secretion of dogs. Viewing the subject from its clinico-neurological standpoint, it becomes evident that worry and depressive states, characterized by morbid fears, are associated with marked derangement of bodily functions. Owing to the lessened vascular tone of such conditions, the body is more prone, also, to receive the encroachments of infective organisms.

There are at present three chief theories of hysteria, all viewing the malady from the psychical side. Two of them (Janet, Freud) use the theory of the subconscious mind, while the third (Babinski) emphasizes the cardinal importance of suggestion. Janet's theory implies that "in proportion as the field of personal consciousness diminishes so do the subconscious mental conditions tend to flourish and abound" (Ormerod). By this means, viewing the hysterical crises and fits or hysteric and somnambulistic states, many characteristic symptoms are explained and may even be used to elucidate the motor and sensory symptoms. In the latter cases, of course, the anæsthetic areas are no longer connected with the main consciousness.

The theory of Babinski (physician to la Pitié) is that hysteria is a special psychical state giving rise to certain symptoms which

can be reproduced by suggestion with rigorous exactness in certain subjects, and be made to disappear under the sole influence of persuasion, thus taking Charcot's main contention that to be hypnotizable is to be hysterical and that exaltation of excitability is common to hypnosis and hysteria.

Frend, the Viennese psychologist, holds that hysteria is due to repressed complexes, generally of a sexual nature. If a moral or emotional shock is experienced, a physical trauma, or painful impression is made on the mind and if relief is not obtained by giving way to the feelings or forgetting, the painful emotion is repressed into the subconscious strata of the mind, where it is kept. Here it behaves somewhat as a foreign body capable of influencing consciousness, but in a distorted or indirect way. Criticism of Frend's view should separate his conception of conflict, repression, and the influence of the subconscious mind from the methods of psycho-analysis, by which he has arrived at his conclusions. The acceptance and application of the sexual origin of hysterical symptoms has met with much opposition.

PSYCHO-THERAPEUTICS. In view of the psychical origin of all hysterical symptoms as well as the closely allied psychoneuroses, it is not unnatural that present-day methods of treatment should be, in the main, psychical. The moral influence of medical men over their patients has long been recognized, but something more than mere verbal encouragement or reassurance is necessary in psycho-therapeutics to-day. Modern methods of treatment are limited. Direct suggestion may be of two kinds, in one of which suggestion is effected during hypnotic sleep, in the other during the waking state. In the former case the physician introduces new ideas into the patient's consciousness or destroys existing ideas without the patient's consent. The latter form, however, closely approaches persuasion.

Persuasion implies the reëducation of the patient's mind by reasoning and argument. By it the physician endeavours to reason with and educate his patient in the causation and production of his symptoms. The good effects depend on the confidence with which the physician inspires his patient.

Psycho-analysis, in the sense employed by Frend is the evolution of a repressed idea by a form of confession and the re-conduction to the patient's consciousness of the thoughts underlying the symptoms.

All of these methods of psycho-therapy have their limitations. On the part of the physician a knowledge of the causes and symp-

toms of hysteria and allied neuroses is essential, as well as a knowledge of the temperament of the patient. For the undertaking of such work, those who give their attention to mental and nervous diseases are best qualified. Physical means in conjunction with psycho-therapeutic efforts are desirable. Isolation of patients in a home or special ward, deprivation of visits from relatives or friends during the course of treatment, cutting off of correspondence and the like, are necessary adjuvants. Rest in bed, abundance of milk, massage, and regular exercise are desirable in the majority of cases.

TUESDAY MAY 21ST, 10 A.M.

Symposium on Graves' Disease, Ætiology and Pathology, Dr. W. T. Connell, Kingston; Symptoms and Diagnosis, Dr. Marquis, Brantford; Surgical Treatment, Dr. Olmsted, Hamilton; Discussion, Dr. Shillington, Ottawa.

3 p.m. After the reading of the minutes a nominating committee was appointed. Dr. A. J. Gibb Wishart, then addressed the meeting on the efforts being made to discover the ætiology of ozæna. He presented the following resolution, which was adopted: "That the Ontario Medical Association have heard with great interest the report of what is being attempted by the International Laryngological Congress towards the elucidation of the ætiology of ozæna and requests the individual coöperation of its members in assisting the local committee to gather the information required. This association would also urge upon the Dominion and Provincial governments the importance of placing the fullest facilities at the disposal of the committee and request that the Provincial Board of Health be requested to coöperate in every way possible."

Prof. McPhedran, seconded by Prof. Leathes, then moved a motion regarding the recent resignation of Dr. Caulfeild from Gravenhurst Sanitarium. After considerable discussion the matter was left in the hands of a committee which was to report at the business meeting of May 22nd. Dr. F. N. G. Starr, seconded by Dr. McKinnon, of Guelph, moved a resolution in reference to the practice of fee-splitting. This finally took the form of a notice of motion to amend the code of ethics which read as follows:

"That it be contrary to ethics for any member to pay a commission to any person who might influence patients to apply for professional advice or treatment.

"That a specialist is entitled to receive his regular fee from the patient without regard to the medical man in charge of the case.

"That in cases where the specialist is called in to assist in the diagnosis or to operate, but where the entire management of the case devolves on the regular attendant, the surgeon's fee should not be less than half of the amount he would charge if the case continued under his full management."

4 p.m. Meeting of Sections.

8 p.m. President's address, Dr. Herbert A. Bruce.

Following Dr. Bruce's address, Dr. Alexis Carrel, of the Rockefeller Institute, New York, read a paper on "Experimental researches in the surgery of the blood vessels and transplantation of tissues and organs." Dr. Carrel spoke in part as follows:

The most satisfactory method of vascular anastomosis dates from a study of the technique used by Payr and Murphy nine years ago. Since then, investigations have been carried on in the University of Lyons, the University of Chicago, and the Rockefeller Institute for Medical Research, resulting in important modifications of earlier methods.

It has been found that certain rules must be adhered to absolutely. A rigid asepsis is essential since the very slightest infection may cause thrombosis. Since injury to the wall of a vessel will have a similar result, only the external sheath of an artery or vein should be lifted by forceps. Humidification of vessel walls with Ringer's solution, coating with vaseline and resection of the external sheaths of vessels to be sutured, prevent fibrin formation, and hence, again, obliterative thrombosis. The hands of operators must be coated with vaseline and the fine threads and needles used must be sterilized in the same medium.

Temporary hæmostosis is secured by the use of small Crile clamps on an ordinary serrafine, while washing of the vessels is effected by means of a Gentile syringe. Sutures are laid out on a black towel, on which they may be readily seen, and the field of operation is surrounded by black Japanese silk. After incision and dissection of the part, all vessels to be attached are carefully clamped, cut, and washed out with Ringer's solution. Then suturing is proceeded with.

Anastomosis may be arterial, venous, or arterio-venous. Classified as to method, it may be termino-terminal, consisting of uniting the ends of two vessels, termino-lateral, consisting of implanting the end of a vessel into the wall of another, or latero-lateral, in which the vessels are united on their lateral aspects. In all cases continuous suture is used and the tubes of various materials, which were formerly used, are dispensed with. When

the suturing is completed, the result is carefully examined and, if no flaws are found, all clamps are removed and the circulation slowly permitted to return.

The materials used for transplantations are not necessarily fresh, in the ordinary sense of the word, since it has been found possible to preserve the elements of life in vascular tissues for considerable periods of time, apart from the body.

The actual method consists in extirpating vessels under rigid aseptic precautions, washing them in Locke's solution, immediately placing them in a glass tube which contains, on a small piece of absorbent cotton, a few drops of the same solution, and then sealing the tube and keeping it at a temperature of 1° Cent. It has been found that from a histologic standpoint the muscle fibres often remain normal even after one month, although they tend to become less elastic.

After healing has taken place, examination of gross specimens of transplanted blood vessels shows slight anatomical changes. Frequently it is hard to even find a scar, while aneurysm and stenosis are rare. Microscopic examination reveals a condition differing little from the normal, but in vessels which have been preserved for long periods of time outside the body, histologic changes are frequent.

Vessel anastomosis has made the operation of transplantation of organs quite feasible and, experimentally, such operations have been performed as transplantation of thyroid, parathyroid, and suprarenal glands; of ovaries, and spleens; double extirpations and transplantation of kidneys in dogs and cats. Similarly limbs have been successfully transplanted from one dog to another and, in one instance, an auricle, external auditory canal, part of the scalp, lymph glands of the neck, and parts of the common carotid artery and external jugular vein were transplanted "en masse" from one dog to another.

Dr. Carrel illustrated his address by a series of lantern slides demonstrating his technique and actual cases in which tangible results had been obtained.

WEDNESDAY, MAY 22ND

9 a.m. Clinics at the medical building in all sections.

12.30 p.m. Complimentary luncheon tendered by the City Council.

AFTERNOON

2 p.m. The address on surgery was read by Dr. Geo. W. Crile, professor of surgery, Western Reserve University, Cleveland. His subject was "Anoci association, a new principle in operative surgery."

This interesting paper had to do with the elimination of shock by measures taken before, during, and after operative procedures. It has been impossible to secure an abstract of it, but it is hoped that the paper will later appear in full in the JOURNAL.

BUSINESS MEETING

Election of officers resulted as follows: President, Chas. G. McGillivray, Whitby; 1st vice-president, A. T. Shillington, Ottawa; 2nd vice-president, Taylor, Goderich; 3rd vice-president, W. T. Parke, Woodstock; 4th vice-president, Chas. H. Harris, Cobalt; secretary, F. A. Clarkson, Toronto; treasurer, J. H. Elliot, Toronto.

COMMITTEE ON CREDENTIALS: R. R. Wallace, Hamilton; Norman Walker, Toronto; W. K. Colbeck, Welland; J. W. S. McCullough, Toronto; S. A. McCoy, Toronto.

PUBLIC HEALTH: W. T. Beeman, Newburg; Jno. Sheahan, St. Catharines; W. C. Olmstead, Niagara Falls; G. M. Davis, Welland; C. J. O. Hastings, Toronto; Lorn Drum, Ottawa.

BY-LAWS: J. W. S. McCullough, G. S. Ryerson, Toronto; J. H. McGarry, Niagara Falls; Jno. Malloch, Toronto; W. T. Connell, Kingston; C. P. Lusk, Toronto.

ETHICS: A. B. Osborne, Hamilton, A. R. Casgrain, Windsor; J. N. Beadley, Creewale; J. O. Ivey, Cobourg; E. T. Killam, Niagara Falls; S. Johnson, Toronto; C. H. Bird, Gananoque; B. L. Riordan, Toronto.

Place of meeting next year—Toronto.

The reports of the various committees were then received.

Following the report of the committee in whose hands it was left the following resolution was adopted.

"Resolved that this association, representing the profession of Ontario, desires to place on record its emphatic condemnation of the destruction of the cultures, extracts, and other biological products, representing many months' work, of the physician in charge of the department of scientific investigation in the National Sanitarium Association.

"That a copy of this resolution be sent to each member of the board of the National Sanitarium Association."

Moved by Prof. McPhedran, seconded by Prof. Leathes.

Following this resolution, a resolution was put before the association regarding the registration of osteopaths.

Moved by J. W. S. McCullough, seconded by Richard A. Reeve: "That this association desires to express its most determined opposition to the registration of any kind of so-called 'medical sectarian practitioner,' unless he shall have fulfilled the requirements laid down by the College of Physicians and Surgeons, and that this association is opposed to the lowering of the present standard of medical education in this province."

THURSDAY, MAY 23RD

9 a.m. Clinics at the General, St. Michael's, Grace, and Western Hospitals, and at the Asylum, Queen St.

ENTERTAINMENTS: At 5 p.m., May 22nd, a garden party was given to the members of the association by the president, Dr. Herbert A. Bruce, at his residence. The weather was delightful and the function most successful. H.R.H. the Duke of Connaught graced the occasion by his presence. At 8 p.m., May 22nd, the annual dinner took place. Among the speakers were: Hon. T. A. Reid, Justice Riddell, Rev. Archdeacon Cody, President Falconer, Dr. Fotheringham, Dr. McKid, president of the Canadian Medical Association, Hon Adam Beck, and others.

On Thursday afternoon, May 24th, through the courtesy of the directors of the Ontario Jockey Club, complimentary badges were issued to members of the Association and their wives for the races at the Woodbine. The various golf clubs of the city also extended their hospitality to the members.

THE property of the memorial hospital at Red Deer, Alta., has been transferred to the city council. Additional accommodation is urgently required in the hospital and this will necessitate new buildings, the cost of which is estimated at about fifteen thousand dollars. The hospital board feels unable to collect this amount by voluntary subscriptions and, therefore, it has been considered best that the property should be transferred to the council. It is proposed to submit a by-law to the electors for the purpose of raising the money needed to make the necessary additions to the hospital.

Book Reviews

SURGICAL OPERATIONS. A hand-book for Students and Practitioners. By PROFESSOR FRIEDRICH PELS-LEUSDEN, Chief Surgeon to the University Surgical Clinic in the Royal Charity Hospital, Berlin. Translated by FAXTON E. GARDNER, M.D. 726 pages with 686 illustrations. New York: Rebman Company, 1912.

The books which are published by the Rebman Company have a distinction of style which is peculiarly their own, and we are indebted to this company for many translations into English of books which are accepted as standards in foreign countries. Professor Pels-Leusden is known to many Canadian surgeons who are in the habit of going to Berlin, and they have seen him at work in the Royal Charity Hospital. The translation is done by Dr. Faxton E. Gardner, and it is deserving of high praise. The book bears the title merely "Surgical Operations," being less formal than the one upon "Operative Surgery," and much more comprehensive than a Manual of Technique. The illustrations are drawn by a colleague, Dr. Muller. They are for the most part diagrammatic, and are all the clearer for lack of accessories. It is proper to observe that Professor Pels-Leusden entirely misapprehends the meaning of Lister's work. It is only a partial statement of the case that Lister was content with destroying the germs that had entered a wound. He was equally anxious to prevent them from gaining an entrance. This book covers the whole period of surgery and may be taken as an accurate reflection of modern German methods, and of corresponding value to all operators.

THE HOUSE FLY, DISEASE CARRIER. An account of its dangerous activities and of the means of destroying it. By L. O. HOWARD, PH.D. New York: Frederick A. Stokes Company.

To-day, everyone knows that the house fly may carry disease. The knowledge has been spread by numerous articles published in scientific journals and in the daily newspapers. Occasionally, some of these articles have made extravagant statements. It is the object of the present book, which is written by one who did a

great deal to spread the knowledge of the danger of the house fly, to present in a concise and easily obtainable form all the facts that are important in considering house flies as possible conveyers of disease. The book is an excellent one. It is well written and contains much information that every doctor should have at his finger tips.

THE CAUSE OF CANCER, being Part III of "Protozoa and Disease."

By J. JACKSON CLARKE, M.B., F.R.C.S., Senior Surgeon to the Hampstead and North West London Hospital, and Surgeon to the Royal National Orthopædic Hospital. Author of "Surgical Pathology and Principles" and other books. 112 pages with eight plates and one coloured illustration. London: Ballière, Tindall & Cox, 1912. Price 7s. 6d. net.

The author's view is that cancer and sarcoma are caused by parasitic protozoa, and he has elaborated it upon 110 attractive pages, illustrated with drawings and diagrams. A year or two ago this theory had greater vogue than it has to-day, and the best opinion is that no such easy solution of the cancer problem is likely to be the true one. In any event this book contains a clear statement of the evidence, and as such is of value, even to those who do not regard it as convincing.

REAZIONE DI A. WASSERMANN E SUO VALORE IN SEMEIOLOGIA CLINICA. A critical and experimental study by DR. LUIGI MASSINI. From the Institute of General Clinical Medicine of the Royal University of Genova, Laboratory of Histology and Bacteriology. Genova, Fratelli Waser.

As stated above this is a critical study of the literature combined with the author's conclusions from his own experimental work. It consists of some 150 pages, many of them taken up with tables and not a few with references to the voluminous literature on this subject. While his conclusions do not differ from those which on other occasions have figured in the pages of this journal, it may not be amiss to quote, somewhat freely translated, the more important. The Wassermann reaction is not a true Bordet-Gengou reaction, but a chemical method with a clinical backing. A reaction *sui generis*. It has a definite biological value in that it has put new life into biologic biochemical and physico-chemical research in the field of serology. It is not a reaction which the general practitioner can use himself, nevertheless it is useful to

the practitioner in that it supplies reliable information as to diagnosis, prognosis, and prophylaxis of syphilis. It is practically specific for syphilis, the other diseases which may give a positive reaction being easily excluded.

The Wassermann reaction is useful only when positive. A negative reaction has no significance either in excluding syphilis or in prognosis. In the latter case, however, where a series of reactions prove negative and where treatment has been long continued, one may conclude that the disease is attenuated or extinct. It confirms the luetic origin of general paresis and tabes. The cerebrospinal fluid is useful here. Specific treatment affects the reaction, whether this be by mercury or arsenic. These drugs are most efficient by inunction, or intravenous or intramuscular. By the mouth neither Hg. or As. have much influence on the reaction. It is dependent on the date of infection and the terms and type of treatment, beginning twenty-one to twenty-eight days after the primary sore, and is always present in secondary syphilis. The reaction is useful in the diagnosis of metasymphilis, cardiovascular, adenopathies, visceral lues, etc. It is useful in clearing up cases where the patient himself is unaware of having had syphilis. It explains the laws of Colles and Profeta and is useful in prophylaxis and in forensic medicine, e.g. in the question of marriage.

In short the book is a good critical study of Wassermann's reaction and its modifications, which is just what it pretends to be, and to those who read Italian we can heartily commend it.

INSECTS AND DISEASE. A Popular Account of the Way in which Insects may Spread or Cause some of our Common Diseases. With many original illustrations from photographs. By RENNIE W. DOANE, A.B., assistant professor of entomology, Leland Stanford Junior University. New York: Henry Holt & Co., 1910.

This book fills a useful purpose, since it provides a medium by which busy practitioners and laymen can learn quickly something of the knowledge which has been gained recently of the ways in which insects cause disease in human beings. Although the book contains a few inaccuracies, it presents a very readable statement of the present day knowledge of the subject, and occasionally it alludes to the interesting history of the researches by which that knowledge was acquired. There is a good index, and the forty-five pages of bibliography may please some who wish to learn more of this subject and do not know where to find books treating of it.

PELLAGRA. By GEORGE M. NILES, M.D., Professor of gastroenterology and therapeutics in the Atlanta School of Medicine, Atlanta, Georgia. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company. Cloth, \$3.00 net. Sole Canadian Agents, The J. F. Hartz Co., Ltd., Toronto.

This book consists of a small amount of personal experience surrounded by a mass of quotations. Some of the personal experiences are good; the quotations are given badly. The book is not well written; it is wordy; it wanders; it is inconsequent; and there are few pages without a grammatical error, or other mistakes. The author advances it as a contribution to the American literature of pellagra. It is conceivable that the book might be useful to some practitioner in a remote district of the Southern States, who required a description of the precise way in which pellagra might manifest itself among his patients; it is of little value to anyone else.

DISEASES OF THE GENITO-URINARY ORGANS AND THE KIDNEY.

By ROBERT H. GREENE, M.D., professor of genito-urinary surgery at the Fordham University, New York; and HARLOW BROOKS, M.D., assistant professor of clinical medicine, University and Bellevue Hospital Medical School. Third revised edition; octavo of 639 pages with 339 illustrations. Philadelphia: W. B. Saunders Company, 1912. Price: Cloth \$5.00 net; half morocco \$6.50 net.

That a third edition of this book has been necessary within so few years speaks for its usefulness as well as for the opinion of the student and practitioner for whom it is intended. As a genito-urinary text-book it is commendable in that it is concise; represents the true opinion of the authors while doing justice to those from whose views they may differ; makes frequent references to original papers and other literature; is the conjoint work of a physician and surgeon, which makes for broadness, and especially in that it is evidently founded upon a large clinical and pathological experience. On the other hand, the illustrations might have been better, they are almost too diagrammatic, and in a study where so much depends upon technique a little more on the study of the separated urines would not have been amiss. The book is eminently sane and is a distinct improvement over both former editions. It is a relief to read it after some of the more pretentious volumes on this study.

DIFFERENTIAL DIAGNOSIS. By RICHARD C. CABOT, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School, Boston. Second edition, revised and profusely illustrated. Philadelphia: W. B. Saunders Company, 1912.

The second edition of this work follows the first quickly, showing that it has appealed to many readers. It does this partly by its novelty and partly by its individual characters, characters which it honestly inherits from its talented author. We are by no means sure that differential diagnosis is a subject that can be taught—one physician selects his diagnosis from two, another from ten, possibilities—but a book like this tends to give to the mind practice in the right mode of thinking; the author will weary in well-doing before he gets enough cases tabulated to cover the ground properly, but no one recognizes this so well as he himself. Meantime, to those who do not know the book, it may be said that the cases are grouped by means of the most striking symptoms, and the widely different forms of disease which may present the same striking symptom furnish much food for thought. We find Professor Cabot's book good to read.

CLINICAL DISORDERS OF THE HEART BEAT. By THOMAS LEWIS, M.D., D.Sc., M.R.C.P., lecturer in cardiac pathology, University College Hospital Medical School; physician to outpatients, City of London Hospital for Diseases of the Chest. London: Shaw & Sons, 1912.

We have read this book with some care and much interest; it is designed for the practitioner who is desirous of profiting by recent knowledge acquired by graphic methods of examining the heart, but who has neither the necessary instruments nor the training to apply them. It is perhaps with a sigh of relief that such a one reads Dr. Lewis's remark "the acquisition of the special manipulative skill and the necessary experience . . . entails too great an expenditure of time and energy adequately to repay him or the patients he serves." If this dictum be accepted, we think it unlikely that there is a more royal road to this knowledge than by Dr. Lewis's book. It is short, clear, and direct. Sinus irregularities, heart-block, premature contractions, paroxysmal tachycardia, auricular fibrillation, and alternation of the pulse, are taken up separately and each is explained and discussed. The modes are indicated by which these may be recognized, and the remarks on prognosis and treatment seem to be especially apt.

Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

SURGICAL OPERATIONS. A Hand-book for Students and Practitioners. By PROF. FRIEDRICH PELS-LEUSDEN. Translated by FAXTON E. GARDNER, M.D. Illustrated with 668 engravings. New York: Rebman Company, 1912.

DUODENAL ULCER. By B. G. A. MOYNIHAN, M.S. (Lond), F.R.C.S. Second edition, enlarged. Illustrated. W. B. Saunders Company, Philadelphia and London, 1912.

DIFFERENTIAL DIAGNOSIS. By RICHARD C. CABOT, M.D. Second edition, revised and illustrated. W. B. Saunders Company, Philadelphia and London, 1912.

PELLAGRA: AN AMERICAN PROBLEM. By GEORGE M. NILES, M.D. Illustrated. Cloth \$3.00. W. B. Saunders Company, Philadelphia and London, 1912.

DISEASES OF THE GENITO-URINARY ORGANS AND THE KIDNEY. By ROBERT H. GREENE, M.D., and HARLOW BROOKS, M.D. Third edition, revised and enlarged, with 339 illustrations. Cloth \$5.00 net; half morocco \$6.00 net. W. B. Saunders Company, Philadelphia and London, 1912.

A POCKET FORMULARY. By E. QUIN THORNTON, M.D. Tenth edition, revised. Price \$1.50. Philadelphia and New York: Lea & Febiger, 1912.

WHAT TO DO IN CASE OF POISONING. By WILLIAM MURRELL, M.D., F.R.C.S. Eleventh edition. Price 3s. net. London: H. K. Lewis, 1912.

ONE HUNDRED SURGICAL PROBLEMS. By JAMES G. MUMFORD, M.D. Boston: W. M. Leonard, 1911.

FORMULAIRE DES SPECIALITES PHARMACEUTIQUES POUR 1912. By DR. VICTOR GARDETTE. Sixth edition. Paris: J. B. Baillière et Fils, 1912.

TEXT-BOOK OF OPHTHALMOLOGY. Volume I. By DR. PAUL ROEMER; translated by DR. M. L. FOSTER; with 186 illustrations and 13 coloured plates. Price \$2.50. New York: Rebman Co., 1912.

A DICTIONARY OF TREATMENT. By SIR WILLIAM WHITLA, M.A., M.D., LL.D. Fifth edition. Price 16s. net. London: Baillière, Tindall & Cox, 1912.

CLINICAL CHEMISTRY, MICROSCOPY AND BACTERIOLOGY. By DR. M. KLOPSTOCK and DR. A. KOWARSKY. Price \$3.00. New York: Rebman Company, 1912.

NEW AND NON-OFFICIAL REMEDIES, 1912. Cloth \$0.50, paper \$0.25. Pages 298. Chicago: American Medical Association, 1912.

DEFORMITIES INCLUDING DISEASES OF THE BONES AND JOINTS. By A. H. TUBBY, M.S. (Lond.), F.R.C.S., (Eng.) Vols. I. and II. Illustrated. Price \$12.00 net. Toronto: The Macmillan Company of Canada, 1912.

FELLOWSHIP EXAMINATION PAPERS FOR THE ROYAL COLLEGE OF SURGEONS, Edinburgh, 1906-1912. Price 1s. net. Edinburgh: E. & S. Livingstone.

DENTAL EXAMINATION PAPERS FOR THE DIPLOMAS OF THE ROYAL COLLEGE OF SURGEONS, Edinburgh, 1906-1911. Price 1s. net. Edinburgh: E. & S. Livingstone.

REAZIONE DI A. WASSERMANN E SUO VALORE IN SEMEIOLOGIA CLINICA. By DR. LUIGI MASSINI. Genova: Fratelli Waser, 1911.

CLINICAL CHEMISTRY, MICROSCOPY, AND BACTERIOLOGY. By DR. M. KLOPSTOCK AND DR. A. KOWARSKY, of Berlin. Illustrated; price, \$3.00. New York: Rebman Company, 1912.

- ESSAYS AND CLINICAL STUDIES. By F. G. CROOKSHANK, M.D.
Price 7s. 6d. net. London: H. K. Lewis, 1911.
- WHEELER'S HANDBOOK OF MEDICINE. By WILLIAM R. JACK,
M.D. Fourth edition; price 8s. net. Edinburgh: E. &
S. Livingstone, 1912.
- LANDMARKS AND SURFACE MARKINGS OF THE HUMAN BODY. By
L. BATHE RAWLING, M.B., F.R.C.S. (Eng.), Fifth edition;
illustrated; price 5s. net. London, H. K. Lewis, 1912.
- NEW AND NON-OFFICIAL REMEDIES, 1912. Price, cloth, \$0.50;
paper, \$0.25. Chicago: American Medical Association,
1912.
- HOME NURSE'S HANDBOOK OF PRACTICAL NURSING. By CHAR-
LOTTE A. AIKENS. Illustrated. Philadelphia and London:
W. B. Saunders Company, 1912. Canadian Agents, The
J. F. Hartz Company, Ltd., Toronto.
- SEXUAL IMPOTENCE. By VICTOR G. VECKI, M.D. Fourth edition,
enlarged. Price, cloth \$2.25 net. Philadelphia and
London: W. B. Saunders Company, 1912. Canadian
Agents, The J. F. Hartz Company, Ltd., Toronto.
- INFANT FEEDING. By CLIFFORD G. GRULEE, M.D. Illustrated;
price, cloth \$3.00 net. Philadelphia and London: W. B.
Saunders Company, 1912. Canadian Agents, The J. F.
Hartz Company, Ltd., Toronto.
- HARELIP AND CLEFT PALATE. By JAMES BERRY, B.S. (Lond.),
F.R.C.S. and T. PERCY LEGG, M.S. (Lond.), F.R.C.S.
242 figures. Price, 12s. 6d. net. London: J. & A. Churchill,
1912.
- THE PRACTICE OF MEDICINE. By FREDERICK TAYLOR, M.D.
Ninth edition. Toronto: The Macmillan Company of
Canada, 1912.
- SYSTEMATIC CASE-TAKING. By HENRY LAWRENCE MCKISACK,
M.D. Price, 3s. 6d. net. London: Baillière, Tindall and
Cox, 1912.

Res Judicata

THE CONSERVATIVE TREATMENT OF SUPPURATIVE OTITIS MEDIA

THE cause of suppurative otitis media is the operation of microorganisms. The mode of entrance is: (1) Through Eustachian tubes; (2) Through the blood; (3) Through a perforation in the drum; (4) Through the lymphatics; (5) By contiguity from nearby sources of suppuration. Acute inflammation always precedes the chronic, and the causes of the chronic are: (1) No treatment of acute form; (2) Inefficient treatment of acute form; (3) Virulent infection which involves the bone or antrum from the beginning.

It has been said that in every case of otitis the antrum is involved: but I am not prepared to admit it, believing that the *auditus ad antrum* may become closed by the swelling of its mucous membrane preventing the involvement of the tympanic cavity. I cannot state too forcibly that naso-pharyngeal conditions are largely responsible for otitis media, and that the microorganism producing the disease comes through the Eustachian tube in most cases. S. J. Koptsky of New York in the *Annals of Otology*, June, 1910, states that: (1) The normal tympanic cavity is sterile; (2) Pathogenic microorganisms are the cause of inflammatory reactions.

The types of otorrhœa, according to S. MacCuen Smith, vary according to their origin: (1) Naso-pharynx and Eustachian tubes, discharge ropy and mucoid. (2) Tympanic cavity alone, discharge scanty and yellowish. (3) Bone lesion, discharge yellow or greenish-yellow and offensive.

I am inclined to think that many cases of the first and second types, when they do not readily yield to mild measures, are too soon subjected to operative procedures and do not give good results because the mucous membrane is not healed by the operation, and they require the same treatment after the operation as would have cured them without the operation.

The acute condition may be mild or severe, according to the infectious organism; some are so mild as to get well without any perforation of the tympanum, others are more severe and rapidly cause perforation which, after a time—varying from a few days to a week or two—will heal, leaving the middle ear structures

but little impaired; others again, caused by virulent infection of the streptococcus, as in scarlet fever, rapidly involve the bone or antrum and, unless speedily relieved, involve the mastoid. Most of the acute cases can, by proper attention, be cured by conservative measures, and they only become chronic by want of attention or by inefficient treatment. An acute otitis media, per se, does not call for operative measures, except parecentesis; and only on the onset of complications, such as involvement of the mastoid, does it become necessary to operate.

Parecentesis, in severe acute conditions where the exudation is of great amount, causing severe pains and bulging of the tympanum, is a necessary treatment and a method of prevention from more serious complications. As naso-pharyngeal abnormalities are the chief cause of otitis media, it is important that this region be put right, and adenoids, pharyngeal adhesions, and congestions removed by appropriate means.

In chronic naso-pharyngitis, I have found that direct applications, by means of a bent applicator, to the region affected, by way of the mouth, are one of the most effective methods of treatment, using stimulating or astringent applications as seem necessary, such as, iodo-tannin solutions, iodine and potassium iodidi, ammonio-ferrie-sulph, agnoz, etc. Acute otitis, in children especially, will be practically cured by irrigations, with the exception of virulent infections. After the subsidence of acute inflammation I have found it beneficial to inflate the Eustachian tubes with medicated vapour from nebulizer two or three times a week, to promote absorption of exudates, so as to prevent adhesions and consequent impairment of function.

By the time the conditions have become chronic, most of the lower half of the drum membrane will be destroyed. If not, a combination treatment such as enlargement of the opening, syringing of the middle ear, and inflation of the Eustachian tube, continued for weeks or months if necessary, will result in such a condition that the mucous membrane of the middle ear will be free from all discharge, except a little moisture at times, which condition might be regarded as a cure. I regard free drainage as perhaps the most important essential, and if the drum opening is small I should suggest its enlargement. If the opening is small but large enough for the introduction of the tip of a middle ear syringe, I should use the latter; this treatment in combination with Eustachian tube inflation—with medicated vapour preferred—is usually successful.

During the treatment my patients use antiseptic syringing

or irrigations at home between the intervals of my office treatment, employing preferably bichloride solutions; special attention is paid to the free ventilation of the Eustachian tube where the nature of the discharge, or other symptoms, point to this tube as being the source of the trouble.

The treatment most frequently employed was inflation by vapour from nebulizer; when using the treatment make sure that the drum perforation is large enough to give free vent to any pus or secretion blown out.

I have not used fluid injections through the tubes from the throat, preferring treatment of throat, and drops into ears which percolate down tubes.

I frequently use the old-fashioned remedy of dropping alcohol and acid boric into the ears, and have not as yet found anything better where there is a swelling of mucous membrane and a tendency to the formation of polypi. It is always necessary to remove polypi and then seek to remedy the condition that produced them, which is often found in want of cleanliness, insufficient drainage, etc.

Middle ear syringing with Blake's syringe is one of my frequent treatments. I have cured cases of suppuration that have continued for from ten to twenty years, in which the malleus and incus had both disappeared, by the persistent use of irrigations, drops, and drainage; so that although the inner wall of the mucous membrane is exposed, no trouble arises except occasionally a little moisture. Injections consist of solutions made up of equal parts of bichloride, formalin, alcohol, and acid boric,—or hydrogen dioxide,—aqua and glycerine.

Aspiration I regard as one of the most important methods of treatment in chronic cases. Rarefy the air so that the membrane is congested and filled with pure blood, and you have a condition that tends to throw off the unhealthy diseased tissue and dead bone. Aspirate, then use middle ear syringe with an antiseptic solution. Do this two or three times a week and let the patient syringe the ear at home between times.

Should most of the drum membrane be gone, and the ossicles be much retracted and adherent to the inner wall, so as to materially obstruct drainage, I regard their removal as necessary. I have removed the ossicles in two cases with results that have surprised me, as, with the free drainage secured, the ear in each case rapidly dried up; in each case this satisfactory condition has now persisted for several years. In one case, after removal of the ossicles, bare bone was detected and the attic curetted with good results. Edward

P. Fowler, N.Y., says in the *Annals of Otology* for June, 1910, that in a study he has carried out he finds that twelve per cent. of all diseases of middle and internal ear give positive specific reactions by Noguchi's method and are improved by anti-specific treatment. This may help us in the future.

I do not recommend the use of the dry dressing of acid boric, as my experience with this dressing has not been satisfactory. Neither do I recommend the use of gauze, as in most cases, it is necessary to remove it so often that the patient frequently objects; I have found that equally good results are obtained by the open wet method.

VACCINE THERAPY. Dr. E. W. Nagle, of Boston, reports forty cases, from dispensary and private practice, treated with antogenous serum, of whom thirty-nine were cured. Other observers do not report so favourably; in cases where the bone is involved, the vaccine treatment does not seem to be satisfactory. On May 10th, Dr. Sidney Yankauer, of N.Y., reported the cure of six cases by curetting the Eustachian tube by a special instrument introduced through a tympanic perforation, thus cutting off reinfection through the tube. Bare or rough bone alone is not a sufficient indication for operation, nor is polypi. In the *British Medical Journal*, of November 17th, 1906, Gorham Bacon said: "In considering the advisability of operation in a patient suffering from chronic otorrhœa, we should determine whether the perforation is sufficient for good drainage, if the opening is large and we can readily pass a probe into the attic and find but little carious bone, and, further, if the patient does not complain of pain, headache, or dizziness, I feel it is our duty first of all to try to cure the disease by means of middle ear injections."

INDICATIONS FOR OPERATIONS. Drainage poor, much carious bone, recurrence of polypi, earache, headache, discharge offensive, dizziness, nausea, cessation of discharge with increasing headache. In private practice, in which I have gained my experience, I think the percentage of cases of chronic otorrhœa requiring operation is small. Discharge, in amount too great to be produced in tympanic cavity and attic, and previous symptoms of mastoiditis point to need of radical operation. The number of cases of chronic otorrhœa is gradually decreasing year by year, as the necessity of properly treating the acute cases is brought home to the general practitioner.

A difficult class of case is that of recurrent acute attacks in chronic affections, where the drainage is not good and part of the

ossicles is present; I am inclined to think, from my experience, that ossiculectomy is advisable in many of these cases. In the absence of symptoms of lesions of the antrum, mastoid, internal ear, or brain, I should recommend conservative treatment, rather than radical operation. Middle ear lesions, also, do not call for operation. The complications necessitating operation are generally produced by the lack of any treatment, and are not due to preventive treatment. In treating a case of suppurative otitis media, the first thing to be decided is whether it is a case which does or does not present symptoms which necessitate an immediate operation, by reason of complications such as involvement of the mastoid or brain.

If there are no urgent symptoms calling for immediate operation, and the only trouble to the patient is one of constant discharge, or more or less dullness of hearing, then the question to be considered is whether treatment or operative interference will be likely to give him the best results, in stopping the discharge and improving or conserving the hearing powers. Many persons cannot see the necessity for, and will not submit to, a radical operation, and in these cases, in the absence of complications making operation imperative, you are limited to conservative measures. Some other patients would submit to operation if you could promise a complete cure, which you do not care to do, seeing that many cases, after operation, remain under the necessity of continued treatment for a certain amount of discharge.

The pendulum is now swinging back a little from the impetus given it by the brilliant results attained in certain cases, in skilful hands, by the radical operation, as the same good results have not always been obtained since the operation has been more universally performed and not limited to the cases specially requiring it. The Heath operation which preserves the hearing, if performed when the ossicles are intact and membrane partly preserved, will, I think, in the future be more frequently performed than the radical.

Given a patient whose only symptoms are an ear discharge and dullness of hearing, I believe, in a great majority of cases, our better plan is to treat the case conservatively, only resorting to an operation after a faithful trial has been given to intelligent mild treatment, some cases that fail by these measures will then be cured by ossiculectomy, leaving only a very few that necessitate radical intervention.

Hamilton.

W. C.

Obituary

DR. T. R. GATES died at Caledonia, N.S., May 7th, in the forty-seventh year of his age. Dr. Gates contracted a cold which developed into pneumonia and death occurred very shortly afterwards. Dr. Gates, who was the son of the Reverend Laurence D. Gates, of Digby, leaves a widow and two children.

DR. H. LEROY FULLER died at his residence in Sweetsburg, Que., after an illness of about two years' duration. Dr. Fuller was born at Sweetsburg in January, 1840, where most of his life was spent, and where he practised for forty years. Dr. Fuller graduated as M.A. from Vermont University in 1861, and, for a few years, taught in the Dunham and Frelighsburg Academies. He then entered McGill University, where he received his medical training; he graduated as M.D. in 1870. During his long medical career Dr. Fuller was universally beloved and respected; his life was a full and active one and contained many interests. Municipal affairs, education, church, all were vital questions to him and in all he took a personal part. He was also surgeon of the 79th Battalion. Dr. Fuller was married twice and is survived by his widow, a son, Dr. G. H. L. Fuller, of Cowansville, and one daughter.

DR. F. W. SEIFERT, of Quebec, died at Forcados, West Africa, on April 24th. Dr. Seifert was a graduate of McGill University. After graduating in 1905, Dr. Seifert accepted the position of medical officer on a boat sailing from England to the Gold Coast.

DR. R. SENECAI died at Rivière Ouelle, Que., in the twenty-eighth year of his age.

DR. JOHN M. STEWART, of Chesley, Ont., died May 26th. Dr. Stewart was a native of Kingston, and a graduate of Queen's University. For over thirty years Dr. Stewart had practised in Chesley, where his ability, kindness of heart, and generosity had gained for him the respect and affection of the entire community. Dr. Stewart combined with his professional work a keen interest in public and civic affairs. About five years ago Dr. Stewart became afflicted with cardiac trouble and his death ensued after a long and trying illness.

DR. JOHNSTON, of Merrickville, died from pneumonia, May 29th. Dr. Johnston was a prominent mason and a member of the Maitland Chapter of North Augusta.

DR. T. D. WHITE, son of the late Thomas White of Brantford, died at Nepigon. Dr. White was a physician on the Grand Trunk Pacific Railway.

DR. DANIEL CLARK, of Toronto, died June 5th, in the eighty-second year of his age. Dr. Clark was one of the most prominent specialists in the treatment of mental diseases on the American continent, and for thirty years was superintendent of the provincial hospital for the insane. Dr. Clark was an entertaining speaker and writer, and was gifted with a fluent style, a good memory, and a keen sense of humour.

DR. NORMAN F. CUNNINGHAM, of Dartmouth, died June 1st. Dr. Cunningham, who was in his sixty-fourth year, was one of the best known physicians in Nova Scotia, and had practised in Dartmouth for thirty years. Dr. Cunningham was born in Antigonish, and received his early education in that town at the St. Francis Xavier College; he afterwards entered Dalhousie University, where he took the honour prize in anatomy. He then went to Bellevue College, New York, from which institution he graduated with the highest honours. For many years Dr. Cunningham was connected with the medical instruction in the province of Nova Scotia, being president of the old medical college and, later, professor of medicine in Dalhousie University. A brilliant practitioner, gifted with a keen intellect, good common sense, and an unceasing fund of humour, Dr. Cunningham was always ready to serve his country and the town of his adoption, and, in the course of a busy life, he filled many important positions, both civic and social. Dr. Cunningham will long be remembered with affection by both patients and pupils; and his poorer patients will not forget the help and consideration—often gratuitous—that he was ever ready to give them. Dr. Cunningham is survived by a widow, one son, and two daughters.

A MUCH lamented victim of the *Titanic* wreck was Dr. Alfred Pain, a son of Captain Pain, of Hamilton. Dr. Pain graduated from the University of Toronto in 1910 and spent a year as house-surgeon in Hamilton City Hospital. Immediately upon the expiration of his term he proceeded to London, where he spent about

ten months. He was unfortunate enough to book his return passage on the ill-fated vessel.

DR. WILLIAM DUNCAN McNAB, of Toronto, died May 14th, 1912, in the fifty-third year of his age. Dr. McNab was the third son of Mr. John McNab, Q.C.

DR. BEVERLEY MACMONAGLE, of San Francisco, died in Paris, May 22nd. Dr. MacMonagle was a native of Moncton, N.B., and practised in Sussex for some time before going to San Francisco.

DR. ROYAL MCSHEA died at Chapman, Kansas, April 7th. Dr. McShea was born in Belleville, Ont., in 1838. Dr. McShea was a graduate of the medical school of the University of Michigan, and for forty-five years practised his profession, first in Onvaneco, Ill., and later in Chapman, Kansas.

News

THE CANADIAN MEDICAL ASSOCIATION, ANNUAL MEETING EDMONTON, AUGUST 10TH, 12TH, 13TH, 14TH.

PROVISIONAL PROGRAMME

On the first Saturday, August 10th, the morning will be devoted to registration of members and payment of fees. At 2 p.m. there will be a general meeting at which the president elect, Dr. H. G. Mackid, will be installed. Following this will come the address of welcome by Lieutenant-Governor Bulyea, Major Armstrong, and others, and the report of chairman of committee on arrangements. At 4 p.m. there will be an automobile tour of the city for the visiting members. For the following day, Sunday, arrangements are being made for addresses in the leading churches on public health matters by prominent members or visiting delegates.

On Monday, August 12th, the various sections will meet for the scientific work of the meeting. At 2 p.m. there will be a general meeting of all sections, at which Dr. H. G. Mackid will deliver the presidential address. This will be followed by the address in surgery which will be given by Dr. A. E. Giles, of London, Eng. In the evening there will be a smoker.

On Tuesday, August 13th, the section meetings will continue all day. In the evening there will be given a public lecture by Dr. Adami, of Montreal, which will be followed by a public reception. Dr. A. D. Blackader, of Montreal, will give the address in medicine.

On August 14th, the work of the sections will cease at 11 a.m., and the members will combine in a general meeting for the election of officers. This will mark the close of the meeting proper. In the evening the members will be entertained by the Edmonton Exhibition Association.

The scientific programme promises to be an interesting one. A list of the papers promised is here appended.

SECTION OF MEDICINE. Papers have been promised as follows: Dr. J. A. McArthur, Victoria, B.C.: "Obesity." Dr. F. G. Finley, Montreal: "Typhoid pleurisy." Dr. Hodgson, Waukesha, Wisconsin: "Diabetes."

Dr. Edward Ryan, of Kingston, Ont., Dr. C. F. Martin, Montreal, and others, have promised papers of which the titles have not been announced. Dr. B. D. Gillies, Vancouver: "Tubercular Meningitis." Dr. D. A. Shirres, Montreal: "Results of treating eighty-two cases of Tic Douloureux, by deep injections of alcohol." Dr. Hamilton, Montreal. "The heart during and after infectious diseases."

SECTION OF SURGERY. Papers have been promised as follows: (1) Drs. J. E. Lehmann and Evans, Winnipeg: "A new method of treatment of habitual dislocation of the shoulder joint." (2) Dr. H. M. Speechley, Pilot Mound, Manitoba: "Successful extraction of two inch nail from child's right bronchus after one year." (3) Dr. J. W. Thomson, Vancouver: "Administration of anæsthetics." (4) Dr. R. E. McKechnie, Vancouver: "Operative treatment of fractures." (5) Dr. G. V. Lockett, Vancouver: "x-ray diagnosis." (6) Dr. J. M. Elder, Montreal: "Surgery of stomach—a clinical study." (7) Dr. A. Mackinnon, Guelph: "Injuries of abdomen without external wound." (8) Dr. H. P. Galloway: "Management of old un-united fractures of the femur." (9) Dr. H. Primrose, Toronto: "Tumours of breast, with special reference to malignancy." (10) Dr. W. Webster, Winnipeg: "Shock and its treatment." Dr. Edward Archibald: "Chronic pancreatitis: a clinical study."

Papers have also been promised, titles not yet announced, from the following: Dr. Jasper Halpenny, Winnipeg. Dr. G. A. Bingham, Toronto; Dr. G. E. Armstrong, Montreal; Dr. F. J. Shepherd,

Montreal; Dr. A. S. Shillington, Ottawa; Dr. Coffee, Portland, Oregon; Dr. E. A. Rich, Tacoma, Washington; Dr. Park, Weed Wille, Seattle, Washington.

SECTIONS OF PATHOLOGY AND PREVENTIVE MEDICINE. (1) Dr. J. L. Todd, Montreal: "Flies versus Health." (2) Dr. H. W. Hill, Minnesota State Board of Health: "Infectious diseases—facts, fallacies, and speculations." (3) Dr. Helen MacMurchy, Toronto: "Infant mortality." (4) Dr. C. H. Vrooman, Kamloops, B.C.: "Tuberculosis—two hundred consecutive cases." (5) Dr. C. J. Hastings, M.H.O., Toronto: "The control of communicable diseases." (6) Dr. D. G. Revell, Edmonton: "Medico-legal exhibits and notes." (7) Dr. T. H. Whitelaw, Edmonton: "Control of small-pox."

Papers have also been promised from: Dr. Mosher, Calgary; Dr. McGregor, London, Ont.; Drs. Wilson and McCarthy, Rochester, Minnesota; Major Lorne Drum, Ottawa; Dr. Jamieson, Edmonton, and Dr. D. D. MacTaggart: "The Coroner's Court in Canada."

OBSTETRICS AND GYNÆCOLOGY. (1) Dr. A. H. Wright, Toronto: "Puerperal Septicæmia." (2) Dr. R. A. Wright, Saskatoon, Sask.: "Spontaneous rupture of a four and a half months gravid bi-cornuate uterus." (3) Dr. F. W. Braasch, Rochester, U.S.A.: "Genito-urinary surgery."

EYE, EAR, NOSE AND THROAT. (1) Dr. R. A. Reeve, Toronto: "Possibly abnormal conditions in apparently normal eyes." (2) Dr. Good, Winnipeg: "Glaucoma." (3) Dr. J. W. Courtney, Ottawa, Dr. Glen Campbell, Vancouver, and Dr. Hackney, Calgary, have also promised papers, the titles to be given later.

Mr. M. J. Sturm, hospital architect, Chicago, will deliver an illustrated public lecture during the convention on: "The economies of hospital planning and management."

The entertainment committee is arranging a programme of entertainment, and a ladies' committee is being formed to look after the entertainment of the wives of members, and other lady visitors. This will include automobile drives, river trips by steamboat, and garden parties, one of which will be given at the university.

More complete information will be furnished before the date of meeting, by a circular containing the programme and other information, which will be mailed to medical men throughout the Dominion.

MCGILL UNIVERSITY

THE following is the list of honours and of those who have been accorded degrees by McGill University:

Holmes' Gold Medal for highest aggregate in all subjects forming the Medical Curriculum: F. H. MacKay, Mount Stewart, P.E.I.

Final Prize for highest aggregate in the Fifth Year Subjects: A. P. Davies, Hull.

Wood Gold Medal for best examination in all the Clinical Branches: D. S. Lewis, M.Sc., Montreal.

McGill Medical Society Senior Prize: First, A. J. Hebert, Shawinigan Falls; Second, E. C. Levine, Montreal.

Honours in Aggregate of all Subjects: 1st, F. H. MacKay; 2nd, A. P. Davies; 3rd, D. S. Lewis, M.Sc.; 4th, W. R. Stone.

MEDICINE: 1st, F. H. MacKay; 2nd, A. P. Davies; 3rd, D. S. Lewis, M.Sc.; 4th, L. G. Houle; J. S. Macleod; 6th, H. C. Steeves, B.A.; L. P. MacHaffie; 8th, W. R. Stone; 9th, Paul Ewert, A.B.

SURGERY: 1st, F. H. MacKay; 2nd, J. W. MacNutt; 3rd, R. W. Digby.

OBSTETRICS: 1st, W. R. Stone; 2nd, F. H. MacKay; 3rd, L. W. MacNutt; M. W. Thomas; 5th, F. S. Swaine, B.A.; 6th, A. B. Walter; 7th, J. S. Jenkins; 8th, R. W. Digby; D. S. Lewis, M.Sc.

GYNÆCOLOGY: 1st, F. H. MacKay; 2nd, A. P. Davies; 3rd, L. G. Houle; 4th, L. L. Derby; 5th, D. S. Lewis, M.Sc.; L. P. MacHaffie; 7th, H. H. Planche; W. R. Stone; 9th, A. J. Hebert, C. H. McCreary; 11th, L. W. MacNutt, T. W. Sutherland; 13th, J. J. Rosenbaum.

OTO-LARYNGOLOGY: 1st, L. H. McKim; 2nd, D. S. Lewis, M.Sc., L. P. MacHaffie, P. G. Mulloy; 5th, F. E. Draper; 6th, W. R. Stone; 7th, Paul Ewert, A.B., D. L. MacDonald, B.A., J. S. MacLeod; 10th, D. F. D. Freeze, F. H. MacKay, J. R. Oulton, B.A., A. B. Walter.

OPHTHALMOLOGY: 1st, D. S. Lewis, M.Sc.; 2nd, M. W. Thomas; 3rd, A. J. Hebert; 4th, D. F. D. Freeze, F. H. MacKay; 6th, R. W. Digby, L. W. MacNutt, T. W. Sutherland, E. J. O'N. Walcott; 10th, Samuel Brown, J. R. Oulton, B.A., A. V. Webster.

PATHOLOGY: 1st, F. H. MacKay; 2nd, A. P. Davies; 3rd, L. G. Houle, 4th, E. J. O'N. Walcott; 5th, L. W. MacNutt, A. V. Webster; 7th, J. S. Macleod, A. B. Walter; 9th, D. S. Lewis, M.Sc., D. L. MacDonald, B.A., L. H. McKim; 12th, A. L. Hebert,

L. P. MacHaffie, J. R. Oulton, B.A., H. H. Planche, H. C. Steeves, B.A., F. S. Swaine, B.A.; 18th, C. H. McCreary, L. T. McNulty; 20th, S. G. Beck, B.Sc., R. W. Digby, F. E. Draper, Paul Ewert, A.B., D. F. D. Freeze, J. S. Jenkins, J. W. Stewart.

The following is the pass list.:

S. G. Beck, B.Sc., Hecktown, Pa.; C. R. Bourne, Mount Tolmie, Victoria; Samuel Brown, Hallville, Ont.; J. W. Crawford, Courtenay, B.C.; A. P. Davies, Hull; L. L. Derby, Plantagenet, Ont.; H. R. Derome, Montreal; R. W. Digby, Brantford; H. T. Douglas, Montreal; F. E. Draper, Montreal; Paul Ewert, A.B., Gretna, Man.; D. F. D. Freeze, Sussex, N.B.; H. G. Furlong, Norwich; F. L. Gregory, Fairville, Me.; J. Harrison, B.A., Georgetown, Demerara; A. J. B. Hebert, Shawinigan Falls; L. G. Houle, Charlottetown; J. S. Jenkins, Charlottetown; S. G. Kean, M.D., Brookfield, Nfld.; Joseph Kolber, Montreal; D. S. Lewis, M.Sc., Montreal; D. L. MacDonald, B.A., Calgary; L. P. MacHaffie, Cornwall; F. H. MacKay, Mount Stewart; J. S. Macleod, Charlottetown; L. W. MacNutt, Charlottetown; C. H. McCreary, Morrisburg, Ont.; L. H. McKim, Wallace Bridge, N.S.; W. H. McMillan, Brockville; R. S. Miller, M.D., Demerara; P. G. Mulloy, Inkerman, Ont.; J. R. Oultin, B.A., Lorneville, N.S. H. H. Planche, Cookshire; G. Stuart Ramsey, Quebec; H. R. Robert, Au Sable Forks, N.Y.; J. J. Rosenbaum, Montreal; H. C. Steeves, B.A., Hillsborough, N.B.; J. W. Stewart, Hampstead, Ont.; W. R. Stone, Vancouver; T. W. Sutherland, Saskatoon; F. S. Swaine, B.A., N. E. Harbour, N.S.; M. W. Thomas, Victoria; E. J. O'N. Walcott, Christ Church, Barbadoes; Irwin Wallace, Belleville; A. B. Walter, Salt Spring Island, B.C.; A. V. Webster, Marie, P.E.I.

In addition to the above, Messrs T. A. Briggs, A. N. Foster, A. B. Hawkins and L. T. McNulty, have passed in all subjects of the final year with the exception of medicine and clinical medicine. They will be granted a supplemental examination in this subject in September.

FIVE hundred thousand dollars have been bequeathed to the Montreal General Hospital by the late John Torrance Van Neck, who died at Cannes, France, on February 22nd, 1912.

In the annual report of the Protestant Orphans' Home at Toronto, the secretary states that the standard of health of the children admitted to the home is much lower than it was formerly. Most of these children were born in Great Britain or Ireland. The

thought it suggested is that a closer supervision at the ports of entry might improve these conditions.

THE annual meeting of the Prince County Medical Society was held at Summerside, May 30th. On this occasion, a new code of by-laws and regulations for the government of the Prince County Hospital was drawn up. A copy is to be sent to all the medical men in the county for endorsement.

DR. P. J. McDONALD, of Little Current, has been appointed physician to the Indians of Sucker Creek, Sheguiandah, and Birch Island.

THE thirteenth annual meeting of the American Therapeutic Society was held in Montreal on June 1st, under the presidency of Dr. A. D. Blackader. This is the first time the society has met in Canada.

DR. DAVIS, resident physician of the Six Nations reserve, has been appointed medical superintendent at an annual salary of three thousand one hundred dollars.

SCARLET fever is very prevalent in St. John's, Newfoundland.

AT a meeting of the Dunnville Board of Health, which took place May 23rd, it was decided that measures should be taken to improve the sanitary conditions of the town, and that an attempt to exterminate the house fly should be made.

THE report of the medical health officer for Toronto shows that during 1911, the death rate from typhoid fever was only one-half as great as that for 1910. During the month of April, 1912, only seven cases of the disease had been reported.

MEASLES has again broken out in Hamilton, and one hundred and sixty-three cases have been reported. There have also been reported, eight cases of mumps, three cases of scarlet fever, one case of diphtheria, four cases of chicken-pox, and ten cases of whooping cough.

THE report of the medical superintendent of the Nova Scotia provincial sanitarium for the treatment of tuberculosis shows that

during the year 1910-1911 fifty-five patients were treated; of these thirty-nine were discharged, ninety-eight per cent. of which were apparently cured, disease arrested, or improved. Tuberculin has been given to a number of the patients, and it has been found that most cases show a distinct improvement and are less liable to relapse than are those to whom it has not been administered. It has been deemed advisable to reject far-advanced cases of the disease; it is considered best that such cases should go to the hospitals, and that the sanatorium should receive only those cases in which it is thought that a probable cure may be effected. Several alterations are to be made in the buildings of the institution; and two open-air pavilions are to be erected on either side of the main building. When the proposed changes are completed, it is hoped that sufficient accommodation for fifty patients will be provided. A plea is made for the erection of a recreation pavilion and a small workshop, in which patients may indulge in healthful exercise and employment.

NINE cases of small-pox are reported from Toronto, and four cases of the disease are under treatment at the Montreal Civic Hospital. One case has been reported from Kincardine.

A NEW wing is to be added to the General Public Hospital, St. John, N.B.; the estimated cost is thirty thousand dollars.

AN isolation hospital is to be established at Virden, Man.

THE Union and Comox District Hospital at Cumberland, B.C., is to be enlarged; the plans for an isolation hospital are also in course of preparation.

IT has been decided to erect a hospital on the high ground overlooking Porcupine Lake; the site chosen is conveniently near South Porcupine and Golden City. Timmins is to have a hospital of its own, to be situated near Pearl Lake.

THE plans for a temporary isolation hospital at Edmonton were recently submitted to the medical health officer. The building is to be erected immediately to the rear of the permanent building which is in course of construction. The temporary building will accommodate twenty-five patients, and will be used in the place of the hospital which was destroyed by fire some months ago. When

the permanent hospital building is completed, this temporary structure will be removed to a more isolated site and will then be used only for cases of small-pox.

THE report of the medical health officer for Edmonton shows that during the month of March, two hundred and ninety-one cases of infectious disease occurred in that city. Of these, two hundred and eighteen were measles and twenty-five were small-pox. Fifty-eight cases were treated at the isolation hospital; one death occurred.

THE late Dr. Clemesha has bequeathed ten thousand dollars to be used as a maintenance fund for a hospital to be erected at Port Hope, provided the hospital is built within ten years from the date of his death. By the will of the late John Helm, a further sum of twenty thousand dollars is bequeathed to the hospital, should it be established at Port Hope. It is proposed to proceed at once with the erection of a local hospital.

THE building of the Victoria Hospital at London, Ont., is to be remodelled. An additional storey is to be added and a roof garden provided, where the patients, the majority of whom are suffering from tuberculosis, may get fresh air and exercise. To do this, the hospital trust has promised to provide ten thousand dollars and the city council has agreed to add fifteen thousand dollars to this amount. The sum of four thousand eight hundred and fifty dollars has already been subscribed towards the ten thousand dollars required. The city council has also agreed to expend the sum of seventeen thousand five hundred dollars on improvements to be made to the east wing of the hospital.

AN epidemic of diphtheria has broken out in Blumphenhof, a small village in Saskatchewan. Most of the cases are children, among whom several deaths have occurred. Measures to prevent a further spread of the disease are being taken by Dr. Wilson, of Regina, assisted by Dr. Kelly. Several cases of diphtheria have also occurred at Vancouver. It is proposed to erect an additional building, in connexion with the Vancouver General Hospital, for the treatment of cases of this disease.

FIFTY-FIVE cases of small-pox have been treated in Edmonton since the commencement of the present year. The last case was discharged on Saturday, May 25th.

SEVERAL cases of small-pox are reported from Woodstock, Ont. Five of these cases are from one household. It is feared that many may have contracted the disease.

SEVERAL deaths from diphtheria have occurred at Lac-du-Bonnet, Man.

THE government of Ontario has purchased the Barriger Farm for the Eastern Hospital at Brockville.

CASES of small-pox are still reported from Toronto. A young woman was found to be suffering from a mild form of small-pox; in the same house were ten other women. All were immediately quarantined and vaccinated. The woman suffering from the disease had never been vaccinated. Another case reported is that of a woman of sixty-six years of age, who, it is stated, contracted the disease through the visits of two girls living in the house in which the case first mentioned was discovered.

Two further cases of small-pox have been reported from Moose Jaw.

ACCORDING to the *Collingwood News*, four children died within a week, at Owen Sound, as a result of measles.

FROM the *Regina Leader*, it appears that the epidemic of measles in Regina is spreading. The chief difficulty appears to lie in the fact that cases of the disease are not reported sufficiently early to prevent contagion. So far, no deaths have been reported.

Two cases of leprosy have been discovered in Montreal, both cases are Chinamen.

AN epidemic of scarletina is reported from Brockville.

SCARLET fever is very prevalent in Halifax, and several cases of the disease have occurred at Dartmouth. The disease is also reported from Kincardine.

AN outbreak of small-pox has occurred at Deer Island, N.B., where seven cases have been reported. A strict quarantine has been established under the direction of Dr. E. B. Fisher, secretary of the provincial board of health.

At the regular meeting of the Victoria hospital trust of London, Ont., which took place May 15th, Dr. Ernal Bice, was appointed house surgeon until October 31st next. The superintendent reported that, during the month of April, one hundred and forty-seven patients had been admitted to the hospital; sixty-three men, one hundred women, and forty-three children had been discharged; and eight births and seventeen deaths had occurred. The cash receipts for the month amounted to three thousand eight hundred and seventy dollars, while accounts amounting to eight thousand seven hundred and sixty-two dollars were passed. It is proposed to make an appeal for funds in order to enlarge the hospital; this question will probably be taken up at the next meeting.

THE seven health districts into which the province of Ontario has been divided are : London, Palmerston, Hamilton Peterborough, Kingston, North Bay, and Fort William. The following regulations have been adopted by the provincial board of health:

1. Every district officer of health shall, as a condition of his appointment, attend the course of instruction in public health and pass the examination prescribed by the University of Toronto or such other university as may be designated by the lieutenant-governor-in-council.
2. Every district officer of health shall reside in the respective headquarters designated by the lieutenant-governor-in-council.
3. Every district officer shall devote his whole time to public health work in the district for which he is appointed, or in any part of Ontario where he may be required to do so by the board. He shall not engage in private practice.
4. Every district officer of health shall be paid an annual salary of \$2,500 and his actual and necessary travelling and other expenses incurred in the discharge of his duties.
5. Every district officer shall enforce the Public Health Act, the regulations, and any other Act or regulations respecting the health of the inhabitants of the district, or their protection from communicable disease, and generally do within the district anything which a member of the provincial board of health, medical officer of health, or sanitary inspector is authorized to or required to do under the Public Health Act.
6. Every district officer shall act under the supervision and control of the board, and shall report to it daily, and shall in such report give such information as may be required by the board or by the regulations.

VICTORIA is badly in need of a new hospital. At a mass meeting of the Women's Auxiliary of the Provincial Royal Jubilee Hospital, which took place on May 10th, Dr. Robertson stated that the present hospital was not only inadequate, but quite obsolete. The present buildings do not admit of enlargement, and a campaign for funds with which to erect a new hospital has been commenced; it is hoped, ultimately, to collect the sum of three hundred thousand dollars for this purpose.

A BY-LAW is to be submitted to the people of Renfrew to grant the sum of ten thousand dollars towards the amount necessary to make some additions to the Victoria Hospital. One thousand dollars of this amount is to be devoted to the erection of an isolation hospital.

AN addition is to be made to the St. Mary's Hospital at New Westminster. The estimated cost is about fifteen thousand dollars.

THE regular meeting of the Edmonton Hospital Board took place on May 9th. Some discussion arose as to what should be done with the old hospital building; it is thought probable that it will be sold or rented. We learn from the *Bulletin* that the nurses' home has been sold to the city to be used as a day nursery.

MR. WILLIAM MCKAY, has been appointed health inspector for Fredericton.

ACCORDING to the *Royal Gazette* there are, at present, two hundred and sixty-three medical practitioners in the province of New Brunswick.

MEASLES was very prevalent in Fort William during the month of May, and many cases of the disease were reported from St. Joseph's orphanage. Several deaths have occurred at Owen Sound, as the result of a recent outbreak of the same disease.

A NEW ward has been added to St. Joseph's Hospital, Peterborough. The ward comprises two rooms, one of which is intended for boy patients, while the other is intended for girl patients.

THE new hospital to be erected at Port Hope is to be situated at the corner of Hope and Ward streets. The property, which was

valued at five thousand dollars, belonged to Mr. James, who has donated one thousand dollars in cash to the hospital, thus making the net price of the site chosen four thousand dollars.

THE monthly meeting of the Fredericton Hospital Board took place on May 6th, under the presidency of Hon. Judge Barry. During the month of April forty patients were treated at the hospital, fourteen of which were surgical cases. Five deaths occurred.

ON Monday evening, May 6th, the formal opening of the Toronto Graduate Nurses Club, at 295 Sherbourne Street, took place. The building, the lease of which was presented by Mr. John Ross Robertson, fulfils the purposes of a club for graduates of recognized institutions and, at the same time, provides a headquarters for a central registry, including a list of four hundred and seven nurses.

THE Inter-Urban Clinical Club, comprising members from Cleveland, Pittsburg, and Toronto, met in Toronto in May.

A NEW children's hospital is to be erected at Hamilton, which is to provide accommodation for thirty beds. The cost is estimated at thirty thousand dollars, or one thousand dollars for each bed provided.

DR. WILLIAMS, of Aurora, Ont., has been appointed medical health officer for Whitchurch.

AN addition is to be made to the St. Joseph's Hospital at Chatham. The building will be three stories high with basement, and each storey is to have a separate sun room and balcony. The cost is estimated at between twenty and twenty-five thousand dollars. A further addition to the hospital, to cost eight thousand dollars, is anticipated.

GODERICH is to have a new hospital; the site has already been purchased and it is proposed to submit a by-law to the ratepayers with the purpose of obtaining funds for the erection of the building.

DR. F. J. EWING, of Vancouver, who is in charge of the medical hospital service of the Grand Trunk Pacific Railway, reports that, on his recent visit of inspection to the Yellowhead Pass district, he found the health of the men in the construction camps there

to be excellent and that there were no cases of infectious disease. A large hospital has now been established thirty miles west of the summit of the Rockies; others are to be established at Smithers and at Fort George. Hospitals are also to be founded and fully equipped at Government Ranch, thirty-five miles east of Aldermere, Burns Lake, and Fraser Lake.

TWENTY cases of measles are reported from Dawson, Yukon. There are also several cases of chicken-pox and one or two cases of typhoid fever. We learn from the *News* that no quarantine is being enforced against either measles or chicken-pox. The only precaution is the posting of a notice on the doors of infected houses warning people not to enter them; we understand, however, that the inmates of these houses are allowed to mix with the community and thus spread the infection.

THE General Hospital at Regina is to be extended at an estimated cost of seventy-five thousand dollars.

It is hoped that the Orangeville Hospital will be completed very soon, and that it will be possible to formally open the building some time during the present month.

Six deaths have occurred, as the result of an epidemic of measles, among the Indians of Port Simpson, and in the Tsimpsean camps, British Columbia. Many cases of the disease have occurred also among the white people living near the reserve.

THE Winnipeg Sanitarium was formally opened on May 6th. The sanitarium, which is situated at Elmwood, is intended for the treatment of patients suffering from nervous diseases; the need for some such institution has long been felt in Winnipeg; the erection of the present institution is due, in large measure, to the efforts of Dr. Carscallen.

DR. McKEE has been appointed municipal bacteriologist for South Vancouver.

THE report of the medical officer for the month of April shows that, in South Vancouver, seven cases of diphtheria occurred, forty-four cases of measles, two cases of scarlet fever, and two cases of whooping cough.

TENTATIVE plans for the erection of a hospital at New Westminster were submitted and approved at a meeting of the city council and board of management of the Royal Columbian Hospital, which took place May 2nd. It is expected that the hospital building will cost about two hundred and twenty-five thousand dollars. A grant of seventy thousand dollars has been made by the provincial government.

THE sum of ten thousand dollars has been added to the provincial grant to the Kootenay Lake General Hospital. A sum not exceeding forty thousand dollars was promised by the provincial authorities towards the hospital, on the condition that the citizens of Nelson subscribed an equal amount. The citizens have now subscribed fifty thousand dollars and the provincial government has generously increased its donation.

FOUR thousand eight hundred and fifty dollars have been collected by the hospital trust of London, Ont., towards the ten thousand dollars required to enlarge the hospital for malignant diseases. A portion of the proposed new building is to be reserved for patients suffering from tuberculosis.

THE formal opening of the Mountain View Hospital at Westport, Ont., took place May 8th, 1912.

Canadian Literature

ORIGINAL COMMUNICATIONS

The Canadian Journal of Medicine and Surgery, June, 1912:

Improvised Methods in the Field	Major J. T. Clarke.
Anæsthetic "Don'ts"	Rachel R. Todd.

Dominion Medical Monthly, June, 1912:

Personal recollections of Lord Lister	F. LeM. Grassett.
Remarks on Eczema, with special reference to its Ætiology	Graham Chambers.

L'Union Médicale du Canada, May, 1912:

- Un cas de syphilis maligne . . . Gustave Archambault.
 Un cas de spina bifida . . . Dr. Laporte.

The Canadian Practitioner and Review, May, 1912:

- Cholelithiasis . . . W. J. Macdonald.
 Personal recollections of Lord Lister . . . John Stewart.

Public Health Journal, May, 1912:

- What is being done outside of the dental
 office for the improvement of the human
 mouth . . . Arthur Day.
 Sanitation and hygiene in Newfoundland
 and Labrador . . . A. W. Wakefield.
 Relationship of the Medical Practitioner
 to Public Health . . . C. A. Hodgetts.
 Memoranda concerning vaccination in the
 prophylaxis of Typhoid Fever . . . W. S. Magill.

Dominion Medical Monthly, May, 1912:

- Dental prophylaxis in children . . . J. A. Bothwell.

Medical Societies

MANITOBA MEDICAL ASSOCIATION

THE Manitoba Medical Association held its annual meeting in Winnipeg, May 21st and 22nd, when a clinical programme throughout was presented. This was the first time the association departed from the customary programme with formal papers. Judging from the success of the venture, it will be repeated when the meeting is next held in a centre large enough to provide sufficient clinical material. The discussions throughout were keen and spirited. The following is the programme: B. J. Brandson: (1) Tubercular syphilide; (2) Valkman's ischemic paralysis; R. F. Park: Valkman's ischemic paralysis; J. E. Coulter: Valkman's ischemic paralysis; C. Hunter: (1) Chorea; (2) Exophthalmic goitre; (3) Neurasthenia; E. W. Montgomery: (1) Functional

renal test; (2) Arterio-sclerosis with gangrene of the toes; N. J. McLean: (1) Sarcoma of ovary and bowel (specimen only); (2) Tubercular kidney; H. P. H. Galloway: Extensive ankylosis following septicæmia; Fred. A. Young: three cases of syphilis; Roy J. Martin: Imperforate anus in a child a year old; R. G. Montgomery: Duodenal ulcer treated by gastro-enterostomy; Prof. Evatt and J. E. Lehmann: new operation for frequent dislocation of the shoulder joint; R. B. Mitchell: case of frequent dislocation of the shoulder joint treated by operation; Jas. McKenty: (1) Two cases of carcinoma of the stomach treated by gastro-enterostomy; (2) Cleft palate; (3) Abscess of brain (specimen only); F. Lachance: (1) Two cases of pus tubes; (2) Urethral transplantation for old injury to ureter (N. J. McLean's case); (3) Two cases of osteomyelitis; D. F. McIntyre: Hodgkin's disease; C. E. Johnston: Cancer of the tongue; S. Alwyn Smith: (1) Cervical caries; (2) Dorsal caries; (3) Lumbar caries; (4) Rachitic kyphosis; (5) Generalized rickets with knock knees, genu recurvatum, scoliosis, and beading of the cartilages of the ribs; (6) Hæmophylic knee joint; (7) Tubercular knee; (8) Two cases of Valkman's ischemic paralysis; (9) Lateral Duchenne palsy; Mary Crawford: Leukoderma; R. F. Park: Infantilism due to pancreatic insufficiency; John Tees: Infant feeding. T. Glen Hamilton, Fred. A. Young, O. Dorman, and R. R. Swan presented a series of cases of phthisis pulmonalis for examination.

On the morning of the 23rd, operative clinics were held at the Children's Hospital, St. Boniface, and at the General Hospital. At the latter institution S. J. S. Peirce also gave a demonstration of intravenous injection of salvarsan.

On the evening of May 21st, a large public meeting was addressed by Dr. J. R. Jones.

The following are the officers for next year: President, J. S. Matheson, Brandon; 1st vice-president, S. C. Bier, Brandon; 2nd vice-president, T. R. Ponton, Macgregor; honorary secretary, Jasper Halpenny, Winnipeg; honorary treasurer, Robert F. Park; executive committee: A. E. Walkey, Portage La Prairie; W. Biglow, Brandon; Jas. McKenty, Winnipeg; R. D. Ferguson, Pilot Mound; W. J. Harrington, Dauphin.

The meeting next year will be held in Brandon.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE fourteenth regular meeting of the society was held Friday, April 26th, 1912, Dr. D. J. Evans in the chair.

PATHOLOGICAL SPECIMENS: Dr. A. H. MacCordick.

1. Liver showing early fatty cirrhosis. Patient was a man aged thirty-four with a marked alcoholic history. He died of double lobar pneumonia. The specimen shows the early stage of the disease of the liver.

2. Liver showing atrophic cirrhosis in which the condition has gone on to contraction of the connective tissue.

3. Liver with biliary cirrhosis, in which the common duct was obstructed for eleven months.

4. This specimen represents a common condition and yet this one gave uncommon symptoms. The man had definite evidence of empyæmia on the right side but repeated tapplings revealed no fluid. It shows a localized pyæmia partly at the base of the right lung and extending upward anteriorly to the fourth rib, at which point the fluid pressed on the right auricle, obliterating its cavity and causing the most intense cyanosis before death. About 500 c.c. of fluid were found in the cavity.

CASE REPORT: Unusual complications of scarlet fever. Dr. J. McCrae. The first complication is one I have never seen previously, nor seen described, viz., a case of "tender toes" following scarlet fever. The patient was a young man of twenty and had the ordinary five or six days of comparatively light fever; about the time that the fever ceased he complained that his previous night's rest had been disturbed on account of pain in his toes. I found on examination nothing particular save that the little toe and that next to it on the left foot were extremely tender. No visible evidence of inflammation existed. To touch them gave the same tenderness that we are familiar with in the toes of typhoid fever. The pressure of the bed clothes was distinctly irritating. The neuritis passed off in about forty-eight hours. I further mention the peculiar localization in two cases of the secondary suppuration which is so comparatively frequent in lymph nodes. Ordinarily, the submaxillary lymph nodes are the ones affected. The first was a severe septic case, and, as usually happens, a few days after the worst of the conditions had gone by, pain and swelling in the face was observed and a definite lymphadenitis existed. This was, however, situated as far above the edge of the lower jaw as the submaxillary is below, and about the same level; it was

incised. It seemed to be a metastasis in some of the small peri-articular or perivascular lymph collections as the seat of the infection.

The other is a case which is still in the hospital and the suppuration occurred exactly in front of the thyroid cartilage. The post cervical gland had become much enlarged and tender. This swelling was quite large, from one to one and a half inches in diameter, and proved to contain pus. Much as I am tempted to suppose that this is a condition of acute suppurative thyroiditis, such as occurs in the case of pneumonia, I fear it is more likely to be a localized, subcutaneous or perivascular lymph collection which happened to be in close continuity to the thyroid gland; and that if the thyroid gland be infected, and as far as one can judge it is, it must be only a secondary infection. The excellent condition of the child precludes the likelihood of determining more accurately in the future.

PAPER: The bone marrow. A study from the standpoint of the clinical pathologist. (Lantern illustrations). Synopsis of paper: The kaleidoscope characters of marrow tissue. Practical utility of a study of the subject. Historical. Correlation of blood-cell counts with marrow-cell counts. Fallacies in interpretation. Technique. Description of the cellular element of the bone marrow with special reference to modern investigations into the life history, phenomena of degeneration, autolysis and death of the different cells. A series of marrow pictures, illustrative of the main changes met with in practice. The interpretation of these pictures by the aid of special charting, and an extension of the Arneth doctrine to all members of the genealogical tree of blood-cells. Guides to diagnosis and prognosis summarized.

DISCUSSION: Dr. L. J. Rhea: Only those of us who have been called upon to study bone marrow really know how very confusing all the different cells are. It is not so difficult to recognize the mature cell, or the early embryonic type, but the intermediate cells are the difficult ones to place. This study has a definite bearing on the carrying out of a classification of tumours, especially in the group which we refer to as lymph adenoma. Until one is able to recognize the types of cells between the embryonic and the mature cells the classification of these will still be puzzling to most of us. It is largely through work such as Dr. Gruner has undertaken that this is possible. The amount of work involved in the preparation of this paper can only be appreciated by those of us who do laboratory work.

THE fifteenth regular meeting of the society was held May 3rd, 1912, Dr. J. M. Elder, president, in the chair.

LIVING CASES: The Elliott and Herbert operations for glaucoma. Dr. W. G. M. Byers explained these operations and exhibited cases.

DEMONSTRATIONS: 1. Cultures of *spirochæte pallida*, by Drs. R. P. Campbell, L. J. Rhea, and J. J. Ower. From the pathological laboratory of the Montreal General Hospital.

Two things are to be noted: first, it is a solid medium, and covered over by a layer of alboline and a stab running down through the centre, almost black from the growth of bacteria; radiating from this stab is a hazy cloud which consists largely of *spirochæte pallida*. It may be well to say in regard to this culture that for many years many attempts to grow the *spirochæte pallida* outside the body have been made but without marked success. They were grown in inspissated horse serum (Scherescrosky), but these *spirochætes* are still of a doubtful nature and never at any time were the observers able to inoculate animals, with one possible exception. Noguchi, working in the Rockefeller Institute, as early as July last, was able to grow it in more or less pure culture, and not only that, but was able to inoculate monkeys and also rabbits with the disease. We here tried to grow it, and first of all started with Noguchi's original method, which is very cumbersome and necessitated the use of a generator for hydrogen gas, which latter was allowed to bubble through the medium and surround it so that no air could gain access to it. We did not have much success with the original method but with the later modification of hydrocele agar under a layer of sterile alboline, we were able to grow them as shown to-night. Under the microscope you will see a number of *spirochætes*; they are not motile because they are held in the agar medium; outside of this, however, they show motion more or less marked.

2. A series of skiagrams by Dr. W. A. Wilkins: (1) Rheumatoid arthritis; (2) Fracture of the scaphoid bone; (3) Charcot's joint in very advanced stage (knee); (4) Hour-glass stomach; (5) Stricture of the œsophagus due to malignant disease; (6) A double bismuth meal; (7) Vertical fracture of the bodies of the fifth and sixth cervical vertebræ.

PATHOLOGICAL SPECIMENS: Dr. O. C. Gruner. 1. Extensive tuberculous ulceration of the ileum. The patient is a woman aged fifty-five, who had complained for three months with symptoms of gall stones; an operation was performed for this which was satisfactorily recovered from. The patient returned two months

later with the same symptoms and subsequently died. The intestine showed extensive ulceration. Each ulcer is of remarkable size, involving the whole circumference of the gut and extending three or four inches longitudinally. The ulcers are dysenteric in character, typhoidal in distribution, and tubercular in causation.

2. Organs from a case of acute leukæmia. The patient was a dentist, aged thirty-three, who had been ill for two weeks only. The first symptoms were abdominal pain, headache, and sore throat. Ten days before admission the gums were spongy and bled considerably; two or three days later there was extensive hæmorrhage under the skin, round the eyes, and over the lower extremities. There was blood in the urine. The temperature was only slightly raised. At autopsy the following conditions were found: The pericardium shows very numerous petechial hæmorrhages; the diaphragm a massive intra-muscular hæmorrhagic exudation; the spleen a characteristic homogeneity of structure; extremely fatty liver; greatly hypertrophied mesenteric glands with hæmorrhages.

Dr. Gruner also showed lantern slides demonstrating the condition of the blood, bone marrow, etc.

DISCUSSION: Dr. J. M. Elder: I would like to ask with regard to the first case (the patient who was operated on for gall stones), were any gall stones found at operation? What about the mesenteric lymph nodes in this case? One would expect to find a considerable enlargement there. Further, is it in your experience, in doing post mortems, a common thing to find perforation as a result of tubercular ulcers of the bowel?

Dr. Pirie: I would like to ask Dr. Gruner if hæmorrhages, as found in the second case, are usually or often as extensive as in this case. Is it possible that on account of the extensive hæmorrhages the case ran such a short course? In general splenic leukæmia cases run a much longer course. Could one draw a prognosis from the extent of the hæmorrhage? I remember the case of a girl who had been ailing for some time and in whom a diagnosis was eventually made from an examination of her eyes, a hæmorrhage being found there. In another case a hæmorrhage lasted for hours as a result of having a tooth extracted. These two cases have shown no further evidence of hæmorrhage and have done well with x-ray treatment.

Dr. Gruner: In answer to Dr. Elder, I would say that the mesenteric glands were universally enlarged. I have seen perforation of tuberculous ulcers occur two or three times. Fifteen gall stones were found at operation. As to Dr. Pirie's remarks, the

extent of the hæmorrhage was the chief feature of interest in this case. Acute leukæmias, however, are not always the same; clinically some have a special tendency and others are associated solely with glandular enlargement. The hæmorrhagic condition is not so much a prognostic sign as is the blood examination. A hæmorrhagic condition may signify a general infection.

PAPER: Diastasis of the recti abdominalis, by Dr. F. W. Harvey. Synopsis: Conditions due to separation of the recti. Ventral hernia and enteroptosis. Causes of diastasis—pregnancy, tumour, etc. Treatment—operative, mechanical, and gymnastic. Case reports—illustrating treatment by gymnastics.

DISCUSSION: Dr. W. M. Fisk: I would like to congratulate Dr. Harvey on the eminently practical paper he has given us, and I would like to ask how often he prescribes the exercises and for what length of time and how soon after confinement.

Dr. J. M. Elder: I would like to ask if I understood Dr. Harvey to say that the great difficulty was not so much in separation of the recti muscles, as in the absorption or weakening of the linea alba? I do not quite see that the two things are identical. If the linea alba holds, then the support must be good; and I still fail to see why, if you strengthen the rectus abdominis you thereby restore the linea alba.

Dr. F. W. Harvey: With regard to your question, I do not pretend that we can restore the linea alba, but what is intended by these exercises is to strengthen the recti muscles, so that they will to a certain extent take the place of the linea alba. In these cases of diastasis, if we can close up the opening by strengthening the recti muscles, they shorten and are straightened and take the place of the linea alba. With regard to the exercises, in cases where I find much diastasis, I have given the exercises about the sixth or seventh day after confinement, and if the condition is very extreme the patients are kept in bed for some weeks in the dorsal position with the body somewhat flexed so as to shorten the distance between the ensiform cartilage and the symphysis and the muscles gradually adapt themselves to that posture. I have instructed patients to take these exercises daily, perhaps twice a day, depending on the case, and at first in weak patients with the assistance of a nurse. With regard to the time diastasis occurs we are told that it occurs during pregnancy, the separation becomes very great during that time and may be increased during confinement. In extreme cases some form of support should be given during pregnancy. In two cases during labour I found the expulsive efforts of little avail making it necessary to apply forceps for delivery.

TORONTO ACADEMY OF MEDICINE

THE annual meeting of the Toronto Academy of Medicine, held in the academy building, 13 Queen's Park, on May 7th, was largely attended.

During the evening reports were read by the president, secretary, treasurer, and the chairmen of the various sections and committees. From the general tenor of each report it was evident that the last year had been a most successful one from every standpoint. Since September, there have been seven general and thirty-nine sectional meetings, the latter being largely clinical in their nature. Besides excellent papers by fellows, addresses by outside men have been read as follows: Dr. C. N. B. Camac, of New York, on "The out-patient clinic, its aims and possibilities;" Dr. Thomas MacCrae, Johns Hopkins University, on "The management of circulatory conditions following acute febrile diseases;" John G. Clarke, professor of gynaecology, University of Pennsylvania, on "The surgical phases of enteroptosis;" Professor Richard M. Pearce, University of Pennsylvania, on "Medical research in American universities, its present needs and opportunities;" and Dr. Richard C. Cabot, Massachusetts General Hospital, on "Some points in differential diagnosis."

The financial condition of the academy is good. The library, with stack-room accommodation for twenty-five thousand volumes, has been increasingly valuable and its patronage by fellows widespread. The academy building is ample in size and permanent. At the conclusion of the academy year, the membership was three hundred and forty-eight, an increase of nineteen over the previous year. Dr. Powell, in his report, stated that among the most urgent needs of the academy was an auditorium with a seating capacity for about four hundred. This question would be dealt with in the near future.

Following the past president's address, Dr. R. A. Reeve was installed in office as president and spoke briefly. Votes of thanks were tendered to Dr. Powell for his unremitting industry while in office and to Mrs. Powell for the gift of a gavel.

The monthly meeting of the sections of medicine was held on April 9th, Dr. Chambers in the chair.

Dr. Goldwin Howland showed a case of disseminated sclerosis having no symptoms of involvement above the arm area. The arms were normal in strength and reflexes were normal. Knee jerk and achilles jerk were plus: no clonus; left toe reflex plus.

On the right side the knee jerk was absent. There was no loss of sensation, but some loss of power in the hamstrings on both sides. There was no bladder trouble but previously there was some evidence of spasticity. The lesion was disseminated in the lumbar region and of two years standing. There was no history of syphilis and the Wassermann reaction was negative. The question of spinal tumour should be considered.

Dr. Rudolf showed a case of leprosy in a Chinese boy. He gave a history of an attack a year ago, which apparently cleared up. Dr. Rudolf also showed a case of malaria of the tertian type, which had lasted for weeks. Quinine given in ten grain doses before the attack was expected controlled the conditions. Dr. Ferguson, in discussion, spoke of the points for and against the contagiousness of leprosy. He thought it was contagious.

Dr. Geo. Strathy showed a child who had tuberculosis of the knee ten years ago. There was a maternal history of tuberculosis and a paternal one of syphilis. The child became deaf and developed interstitial keratitis. The Wassermann reaction was positive. Three months ago the child's mental condition was one of exaltation, but a month ago she became depressed. Recently she developed an antipathy for her grandmother and had delusions. There was a cell count of seventy in the spinal fluid. The knee jerk was present; the pupils reacted to light. The case was evidently one of general paresis.

Dr. Foster presented a case for diagnosis: An Italian, aged fifty-three. His pupils were irregular, the right larger. The knee jerk was lost on both sides, but the speech was not particularly affected nor was the ataxia pronounced. All laboratory findings were negative, i.e. Wassermann reactions on the blood and spinal fluid, and cell count, butyric acid and ammonium sulphate reactions on the spinal fluid.

Dr. Howland thought that despite the laboratory findings the case must be one of general paresis.

Dr. Chambers showed a case of heart block, first seen five years ago. The pulse was thirty-five and he had had convulsions. Last year he had general œdema and at that time the pulse was twenty-eight. There was a double aortic and a mitral systolic murmur. The polygraph tracings were not quite clear.

Nomination and election of officers for the ensuing year were then proceeded with and resulted as follows: chairman, Dr. H. B. Anderson; secretary, Dr. Frederick C. Harrison; editor, Dr. A. H. Rolph.

The officers of the council for 1912-13 are as follows: president, R. A. Reeve; vice-president, H. J. Hamilton; hon.-secretary, Harley Smith; hon.-treasurer, W. A. Young; past-president, R. A. Powell. The elective members of the council are: John Ferguson; H. A. Bruce; Edmund E. King; George Bingham; H. A. MacDonald; W. H. B. Aikens; Graham Chambers; J. H. Elliot.

The following officers of sections were elected:

State Medicine—Chairman, W. T. Addison; secretary, White; editor, Geo. Nasmith

Surgery—Chairman, Gideon Silverthorn; secretary, W. Warner Jones; editor, Geo. Ewart Wilson.

Pathology—Chairman, Prof. Leathes; secretary N. T. Mac-laurin.

Medicine—Chairman, H. B. Anderson; secretary, Frederick Harrison.

Pædiatrics—Chairman, R. D. Rudolf; secretary, Geo. Boyer; editor, J. S. Graham.

Ophthalmology and Oto-laryngology—Chairman, Geoffrey Boyd; secretary, T. A. Davies; editor, F. C. Trebilcock.

LAMBTON MEDICAL ASSOCIATION

A MEETING of the Lambton Medical Association was held at Thedford on Wednesday, May 8th. The following members were present: Dr. McDonald, of Sarnia, Drs. Newell and Kelly, of Watford; Drs. Reid and Kidd, of Wyoming; Dr. Brown, of Camlachie; Drs. Copeland and Huffmann, of Arkona; and Drs. Munns and Grant, of Thedford. An address was given on "Practice in the early days," by Dr. Munns, and papers were read by Dr. Kelly and Dr. Grant. Dr. Munns was made a life member of the association. The next meeting is to be held at Sarnia in July.

WEST ELGIN MEDICAL ASSOCIATION

A MEETING of the West Elgin Medical Association took place at Dutton on May 16th. An interesting paper on "Cirrhosis of the liver" was read by Dr. Ripley.

ST. JOHN MEDICAL SOCIETY

THE annual meeting of the St. John Medical Society took place May 22nd, under the presidency of Dr. Corbet. The following officers were elected: president Dr. D. Malcolm; vice-president, Dr. T. E. Bishop; recording secretary, Dr. F. P. Dunlop; financial secretary, Dr. W. E. Rowley; treasurer, Dr. James Christie; pathologist, Dr. A. E. Macaulay; librarian, Dr. J. L. Duval.

THE Lady Grey Hospital at Ottawa has recently experienced great difficulty as the result of an insufficient water supply. On one occasion the hospital was for several hours without water. The mains to the part of the city in which the hospital is situated are not large enough and many complaints have been made to the civic authorities. It is suggested that a sixteen inch main be laid from Bronson Avenue to the hospital. However, it will take at least a year to do this and, in the meantime, the hospital must be supplied with water. The question is to receive immediate attention. A large tank to be built near the hospital, in which a reserve of water might be kept, has been suggested as a solution to the problem.

DR. W. W. DOHERTY, of Cambellton, indicted for the murder of D. J. Bruce, on September 21st, last, was acquitted on April 3rd. Mr. Bruce had an altercation with Dr. Doherty, on election day, after which he was struck in the eye by an umbrella in the hands of Dr. Doherty. The doctor stated that the umbrella was raised in self-defence and with no intent to hurt. The injured man died early next morning without regaining consciousness.

SINCE February 1910, when the hospital was first opened, one hundred and seventy-one patients have been treated in the Kincardine General Hospital and seventy-three operations have been performed. The work of the hospital has been somewhat restricted by the lack of space; the addition of a new wing is now under consideration.